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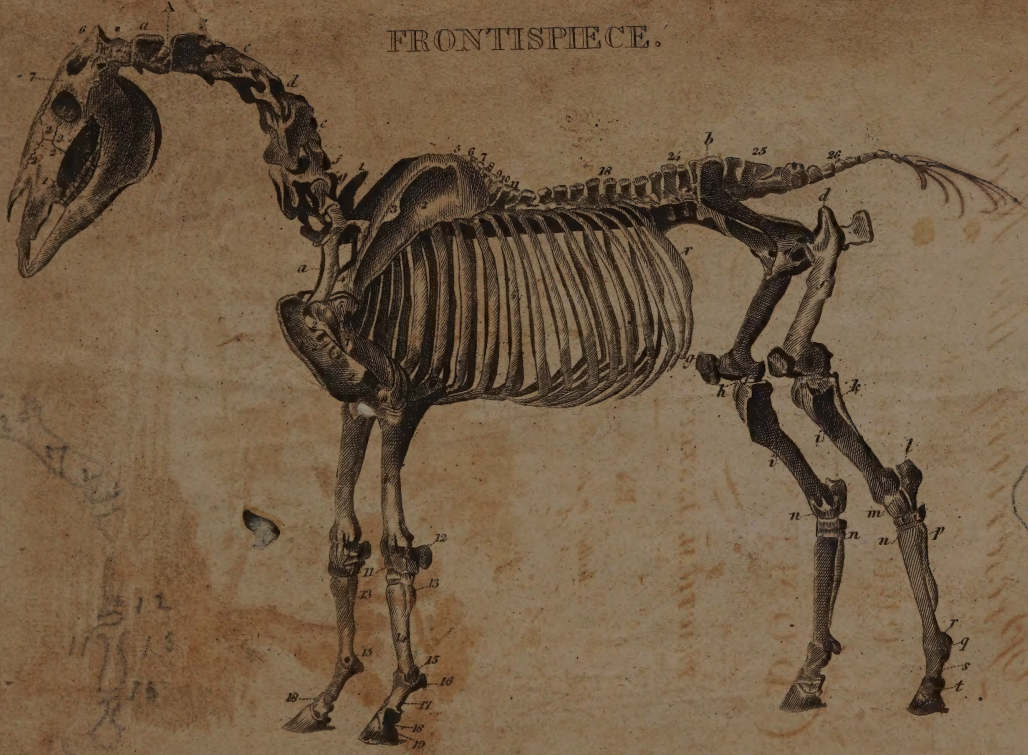

SKELETON OF THE HORSE.

THE
MODERN FARRIER;
OR THE BEST MODE OF
Preserving the Health
AND
CURING THE DISORDERS
OF
DOMESTIC ANIMALS.
with
PRACTICAL INSTRUCTIONS TO SPORTSMEN.

BY A. LAWSON,
Author of the Farmer's Practical Instructor.

NEWCASTLE:
PRINTED AND PUBLISHED BY MACKENZIE AND DENT.

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THE MODERN FARRIER;

OR,

THE ART OF PRESERVING THE HEALTH AND CURING THE DISEASES OF HORSES, *DOGS, OXEN, COWS, SHEEP, & SWINE.*

Comprehending
A GREAT VARIETY OF
ORIGINAL AND APPROVED RECIPES,
INSTRUCTIONS IN
Hunting, Shooting, Coursing, Racing, and Fishing,
AND A SUMMARY OF THE GAME LAWS;
With an enlivening Selection of the
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The whole forming an invaluable and useful Companion to all Persons concerned in the Breeding and Managing of domestic Animals.

BY A. LAWSON,
Author of the Farmer's Practical Instructor.

EIGHTH EDITION.

ILLUSTRATED WITH NUMEROUS ENGRAVINGS.

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1825.

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DEDICATION.

TO THE

COUNTRY GENTLEMEN,

FARMERS, COACH-MASTERS, CARRIERS,

COW-KEEPERS, &c.

Do you

OF

Great Britain and Ireland.

Gentlemen,

The following practical Treatise on the proper Management of Horses, Dogs, Sheep, Cattle, and Swine, is the Result of several Years' Study and Experience; and should it contribute to save you from the mischievous Pretensions of Quacks, and the fatal Interference of ignorant Farriers, Grooms, Huntsmen, Herdsmen, and Cattle-doctors, the Design will be fully accomplished, of,

Gentlemen,

Your most obedient Servant,

The AUTHOR.

EXPLANATION

OF THE FRONTISPIECE.

This accurate representation of a skeleton will be found very useful. All the important parts are clearly delineated, and exhibits the seat of those diseases to which this animal is subject. The mechanical conformation of the horse may also be easily understood by this figure, and will afford much information and amusement to the curious. In describing this figure we will begin with

THE HEAD.

The part marked 1, is a hole through which pass a nerve and an artery. 2 2 2 2, The four crooked lines here delineated, are considered anatomically as divisions between the bones of the face, and are named Sutures. In very young subjects they are very distinct, and by soaking the head of a fœtus or very young colt, the bones which they divide may be easily separated from each other. 4, The orbit or socket of the eye. 5, The cavity above the orbit, in which appears the coronal process or a projecting part of the under jaw-bone. 7, The bone which divides the above cavities, and is sometimes fractured by a horse falling on his head. 3, The angle of the under jaw-bone, where the artery passes, by which the pulse is generally felt. 6, A protuberance on the occipital bone or back part of the head, commonly termed Knoll Bone. From this part the great ligament of the neck arises, which, passing down over the bones of the neck, is fixed into the bones of the withers.

BONES OR VERTEBRÆ OF THE NECK.

There are seven vertebræ in the horse's neck, a, the first or atlas; b, the second or dentata. These vertebræ are very different from the others, being capable of considerable motion; the first with the head and the second with the first. In consequence of this, they are much more liable to dislocation than the other vertebræ, and it is this injury which is commonly termed a Broken Neck. In such accidents the animal is instantly destroyed by the compression which the spinal marrow receives. A considerable space may be observed between the first and second vertebra, which is not the case with the others. This space, marked A, is protected or covered only by the cervical ligament, a thin slip of muscle and skin; it is easily penetrated. Butchers are therefore enabled to destroy animals by plunging a sharp knife into it; and, as a wound in this part of the spinal marrow is almost instantly fatal, it has been considered a better method than the common one of knocking them on the head. The other five cervical vertebræ differ but little from each other, and are very firmly and closely united; they are marked c, d, e, f, g. The dorsal vertebræ, or bones of the back, are eighteen in number. The bodies of these vertebræ are much smaller than those of the neck, and have large upright processes or spines, which in the withers are remarkably high. In fistula of the withers these spinous processes are often diseased. The first dorsal vertebra, marked 1, is lower and of a different shape from the rest, and from this to 11, the height of the spinous processes may be observed to vary; from this to 18 there is but little difference. Next to these, from 18 to 24 are the lumbar vertebræ or bones of the loins. 25, The five vertebræ, which form the sacrum; these, at an early age, are formed into one bone; 26 is the coccyx, or bones of the tail, which are about 17 or 18 in number. Having described the vertebræ of the neck and spine, it is proper to observe that they are so constructed and united, as to form a secure canal for the passage of the spinal marrow, which, in its course sends off nerves to different parts of the body. It is unnecessary to give a particular description of the ribs; there are eighteen on each side, the first is marked a, the last r. The sternum or breast-bone is partly composed of cartilage or gristle; 1 1 1 1, or the fore part, is cartalaginous; 2 2 2 2 is bony. The first nine ribs articulate, that is, are joined to the sternum, and are thence named True Ribs; the other nine are united at the lower part with each other and to the first nine by cartilage, and are termed False Ribs. Fig. 2 represents the upper and wide part of the scapula or shoulder blade, and 3 its spinous process or ridge: at its lower part, 4, is a projecting process, from which a powerful muscle arises. 5, The head of the humerus or shoulder-bone, which being inserted in the socket of the shoulder-blade, forms the shoulder-joint. 6, A protuberance at the head of the humerus, in the fore part of which are two grooves. It is this protuberance which forms the projecting part of the horse's shoulder. 7, The curved process of the humerus. 8, The lower part of the humerus, where it articulates with the radius, forming the next joint of the fore limb. It should be observed, that the scapula and humerus are so placed as to form an acute angle at the shoulder-joint, which is admirably adapted to facilitate the motion of the animal; and it will generally be found that the more oblique or slanting the position of the shoulder-blade is, and consequently the more acute this angle, the more extensive will be the action of the fore leg; 9, which in the plate is placed thus ᘓ, is the olecranon or elbow; this projection affords a great advantage to the muscles which bring back the fore leg after it has been extended or advanced. 10, The radius, which forms the upper part of the horse's fore leg. 11, The knee-joint, which is composed of seven bones. 12, The seventh bone of the knee, which projects considerably, thereby forming a favourable attachment for some of the muscles of the fore arm, and by its curved form serves to protect the nerves, blood-vessels, &c. in their passage to the lower parts of the limb. 13, The upper part of the outer small splent-bone. 13 13, The small splent-bones, the usual seat of the disease termed Splents. 14, The cannon or shank-bone. 15 15, The fetlock-joints. 16, The sesamoid-bones, of which there are two in each leg. The flexor tendon, or back sinew, passes over these bones, which are covered with a slippery cartilage to render the motion of the tendon easy; and by projecting beyond the fetlock-joint, they serve as a lever to the flexor-muscles, that is, the muscles which bend the pastern and foot. 17, The large pastern. 18 18, The front and back part of the small pastern. 19, The navicula or nut bone. 20, The coffin-bone.

Bones of the Hip and hind Leg.

a. a. a. b. b, The left side of the bones of the pelvis or basin-bone, which, indeed, consists only of one large, rather circular bone, with several projecting parts. b b, The upper part or spine. a a, The lower parts. The first *a* represents the part where the bone is sometimes fractured; when this happens, a horse is said to have his hip knocked down. c, The outside of the left hip-joint. e, A projecting part, named Ischium or hitch-bone. f, The femur or thigh-bone. d, A considerable protuberance at its upper extremity, from which a powerful muscle arises. g g, The right and left patella or knee-pan. h, The stifle joint. Within this joint are slippery cartilages, named from their form Semilunar; these cartilages give great facility to the motion of the stifle joint. These joints are secured by peculiar ligaments named Crucial, from their shape. It must be obvious that the patella, from its form and situation, affords great advantage to the muscles of the thigh. i i, The right and left tibia, which, in the horse is generally considered as the thigh-bone. k. A small bone named Fibula. l, The os calcis, calcaneum, or hock-bone. This is a very important part, forming one of the most considerable levers in the skeleton. m, Another large bone of the hock-joint, formed somewhat like a pulley. The motion of the joint depends principally upon this bone, which is named Astragalus. n, n, n, The outside and inside of the small bones of the hock-joint. The inside n, shows the seat of the bone spavin, and higher n, of the same leg, points out the seat of bog spavin. o, The hind shank or cannon-bone. p, The outer splent-bone. r, The fetlock-joint. q, The sesamoid bones. s t, The large and small pastern-bones. u, The coffin-bone.

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Curious Anecdotes.

Appendix.

THE

MODERN FARRIER.

1. INTRODUCTION.

THE term Farrier is derived from the French verb *ferrer*, to *shoe a horse*, and which seems to be derived from the Latin *ferrum*, '*iron*.' And as the persons who shod horses were, for a long period, the only horse-doctors, the term *Farriery* came to signify the art of curing the diseases of horses. The *veterinary art* is now considered as synonymous with *Farriery*. Veterinary is also derived from the Latin, and is used by ancient writers to denote a horse-doctor or cattle-doctor.

The lives and limbs of our valuable domestic animals have long been at the mercy of the most illiterate quacks; and unfortunately there has existed an obstinate prejudice in favour of bold and presumptuous empirics. But the age of delusion is now past, and no rational man will rely on the pernicious nostrums which were formerly puffed off in every newspaper. Much yet remains to be done; but the *veterinary art* has lately acquired an importance, and received such improvements, as predicts a great revolution in this branch of human knowledge.

It is remarkable, that the art of farriery never made any considerable progress, or assumed any thing like a scientific form, till it attracted the attention of medical men. This arises from the strict analogy that exists between the diseases of man and animals. The murrains amongst horned cattle are very similar to the epidemic diseases amongst the human race. The small pox frequently rages amongst sheep, and swine are often subject to the measles. The transfer of the cow-pox to man is considered amongst the most fortunate of modern discoveries. Scrofula, apoplexy, epilepsy, and *tetanus*, or locked jaw, are very common amongst domestic animals. These instances are sufficient to shew the utility of the study of comparative anatomy and pathology, as connected with the veterinary art; for, as the diseases are similar, so will also be the remedies, after making due allowances for the difference of organization.

After becoming proficient in anatomy, a little manual dexterity will soon render the young student a tolerable surgeon. He ought also to study chemistry, and to acquire an accurate knowledge of medicine, and of the doses, as adapted to different animals, in various situations and diseases; and he must attentively observe, and deliberately reflect on the symptoms and progress of the different diseases to which domestic animals are subject. These requisites are all absolutely necessary in order to form a good farrier. But in this work it is merely proposed to assist plain practical farmers and others, in the management of their horses and cattle, to save them from the impositions of ignorant quacks, and to promote a rational system of treatment. In extraordinary cases, a skilful practitioner ought always to be called in; and he who knows most of the nature and danger of diseases, will always be most ready to consult those who possess a superior knowledge on the subject. This is the more necessary, as, from the strength of the arterial system, the diseases in animals are prone to a rapid termination, and hence the treatment must be decisive and energetic.

2. History of the Art of Farriery.

It is generally believed that Xenophon, who lived three or four hundred years before Christ, wrote a small treatise on the figure and management of the horse. Celsus, the elegant imitator of Hippocrates, also wrote on the diseases of animals; but the earliest authentic writings on the subject are found in *De Re Rustica*, a work of the celebrated Columella, who lived in the second century, under the reign of the Roman emperor Tiberius. A compilation from the Greek writers on this subject also appeared from the pen of Vegetius, who flourished in the fourth century.

After this, a blank of more than a thousand years occurs in the history of farriery. During the dark ages, this useful art, like most others, retrograded; but it was during this gloomy period, that the art of shoeing horses with iron appears to have been invented; 'an art which seems to have contributed not a little to throw the management of this noble animal into the hands of a set of arrant blockheads, who were now first called farriers.'

After the sixteenth century, the veterinary art began to assume something of a scientific form; and many able writers began to appear both in France and Germany, amongst whom the illustrious Camper deserves particular notice. In England, the duke of Newcastle, Blundeville, Markham, Barett, Snape, and Gibson, contributed to throw some light upon this useful art. The improvements of the latter were ably extended by Dr. Bracken. Next to this admired writer we may place Bartlett, Osmer, and Clark, farrier to his majesty in Scotland. The elegant work of Stubbs and lord Pembroke also deserves mention. Amongst modern writers, the most eminent are Blaine, White, Feron, Lawrence, Boardman, and Freeman. Culley, of Northumberland, has also published an invaluable work on live stock; and Curwen has given some excellent directions respecting the feeding of cattle. Mackenzie on the diseases of sheep contains many useful hints, as does also Dr. Harrison's work on the rot in this useful animal. Dr. Dickson's elegant work on agriculture exhibits much useful instruction on the management of live stock; and the Rev. W. Daniel's Rural Sports furnishes many interesting anecdotes and useful remarks relative to the dog, that favourite companion of man.

Several writers on this subject have long enjoyed an undeserved degree of celebrity. The egregious blunders and intolerable arrogance of such popular writers as Taplin and Clater, first suggested the necessity and utility of a cheap, intelligible, and rational treatise on farriery. How far I have accomplished the end proposed is left to the judgment of the public; but I may be permitted to state, that no pains have been spared to ensure success.

But the most important measure for the promotion of the art of farriery was adopted by an agricultural society at Ockham in Hampshire, which, at the suggestion of M. St. Bel, a French gentleman, opened a school in London, to which they gave the name of *The Veterinary College of London.* This institution was opened in the year 1790; and M. St. Bel was appointed the first professor.

On the death of this gentleman, Mr. Coleman, an ingenious young surgeon, was chosen to the vacant chair. Several new regulations were immediately adopted. The rooms for boarders were improved, and an anatomical theatre fitted up, with dissecting rooms for the use of the pupils. A medical committee was also appointed, for examining the pupils previously to their receiving a diploma as veterinary surgeons. The committee, in 1801, contained the following eminent names, viz. Drs. Fordyce, Baillie, Relph, Bebington, and Messrs Cline, Home, Abernethy, and Astley Cooper.

The subscribers of the veterinary college pay two guineas per annum or twenty guineas for life. Each subscriber is entitled to send, when sick or lame, any number of horses to the veterinary stables, where no charges are made for medicine, attendance, or operation: the subscriber merely pays for the keeping and shoeing of his horse. Horses of non-subscribers may be sent to the college for the professors' opinion; but they are not admitted into the stables. Pupils, on their admission, pay a fee of twenty guineas. The professor delivers lectures on the veterinary art; and the most eminent medical teachers in London, with great liberality, allow the students at the veterinary college to attend their lectures on anatomy, physiology, surgery, chemistry, &c. gratis. There are four general examinations in the year. The period requisite for obtaining a knowledge of the veterinary art is regulated by the talents and industry of the students. Most of the cavalry regiments have been supplied with a veterinary surgeon from the college.

3. General Description of the Horse.

Mankind have generally agreed to place the horse at the head of their domesticated animals; and indeed the beauty, strength, speed, boldness, and docility of this noble and interesting creature, justly entitle him to this pre-eminence. His reduction into a state of subordination is the greatest acquisition from the animal world which was ever made by the art or industry of man. Repressing his ardour in obedience to the impressions he receives, he flies, or stops, and regulates his motions entirely by the will of his master. He, in some measure, renounces his very existence to the pleasure of man. He delivers up his whole powers; he reserves nothing; and often dies rather than disobey the mandates of his governor.

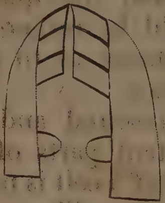
The true thorough-bred, or what is called the blood horse, is indisputably the strongest animal in nature of the same size and weight. His fibres are so peculiarly elastic, and his limbs so admirably disposed, that he possesses an incredible degree of vigour, speed, and power. But as it is intended to examine the different breeds of this useful animal, with the best means of procuring and perpetuating a proper, healthy, and valuable race, in another part of this work, it will only be necessary here to give an idea of the most approved shape of a horse.

The *head* should be small, lean, and straight from the top to the nostril; the forehead broad and ample; the eyes prominent; and the eye-lids elevated and flexible. The branches of the lower jaw-bone should be open and expanded; the nostrils large and open; the mouth small; and the lips deep and pliable.

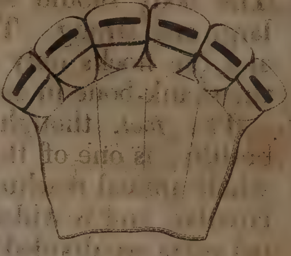
The lower extremity of the *neck* should issue high out of the chest, which gives it a grand and elevated appearance. A thick neck is usually indicative of strength.

The blade-bones should not be perpendicular, but oblique, so as to permit the legs to stand well advanced before the body. This position of the *shoulders* is essential to good and safe action. The chest should be moderately broad, and the muscles of the breast bold and prominent. If the chest be too broad, the horse goes with an unpleasant rocking motion; and if too narrow, the fore-legs are liable to cut and bruise the fetlock joint. The fore-legs should be straight approaching each other in a small degree at the feet. The upper part bold and muscular, the knee broad and flat, and the tendons distinct, firm, and elastic.

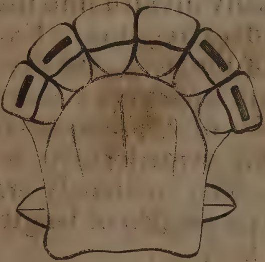
a Young Mouth



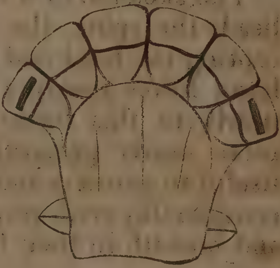
4 Years Old



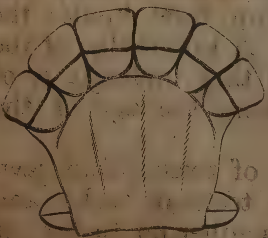
5 Years Old



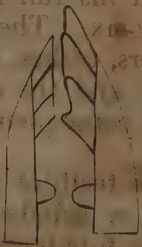
6 Years Old



7 Years Old off



an Aged Mouth



The *body* should be round and capacious; the back descending in a concave line nearly to the middle; and the loins broad and full, with the tail issuing boldly from the croup in an arch-like form. The body should appear short, and the quarters large and strong. The hips should be rather low, and the hocks only at such a distance as to place the shank-bone in an upright position.

The *foot,* though frequently unsound and unhealthy, is one of the most important parts of the whole animal machine. The hoof of a colt is nearly circular, and is widest at the quarters. The external parts are divided into the wall or crust, the sole, and the frog. But an injudicious mode of shoeing, the roughness of the roads, and confinement in the stable, usually reduce this useful member to an unhealthy and deranged state.

The skeleton of a horse is usually divided into the head, the spine, the trunk, and extremities. Excepting the head and fore-part of the neck, the skeleton forms nearly a square, and approaches more nearly to this form as the body of the animal is more nearly proportional. This remark may be useful to painters and sculptors, who commonly err considerably with respect to the proportion of length and breadth in their figure of a horse.

4. Of the Teeth.

A male horse has forty teeth when he has completed his full number: the mare has usually but thirty-six. They are divided into three kinds; the nippers, tushes, and grinders. A knowledge of the teeth, and the changes which they undergo, is of great consequence in ascertaining the age of the horse.

The teeth of a horse consist of twenty-four jaw-teeth or grinders, four canine teeth or tusks, and twelve fore-teeth. Mares have either no tushes, or very short ones. Five days after birth, the four front-teeth or nippers begin to shoot. In a few months, they are increased to six above and six below.—They are easily distinguished from the teeth that come afterwards by their smallness and whiteness.

When the colt is about two years and a half old, he casts the four middlemost of his foal-teeth; but in some instances they are retained nearly three years. The new teeth, which are stronger, and always twice the size of the foal teeth, are called incisors or gatherers. When a horse has got these four teeth complete, he is reckoned three years old. When he is about three and a half, he casts out four more of his foal-teeth, viz. two above and two below, one on each side of the middle teeth. Shortly after, the tushes usually appear, though sometimes not till the horse is full four years old. In a young horse, they have a round edge all round the top and on both sides, the inside being somewhat flattish, and inclined to hollowness.

When a horse comes five, or rather in the spring before he is five, the corner teeth begin to appear, but at first just equal with the gums, which look rather rawish. These teeth grow leisurely, and are seldom much above the gums till a horse is full five. They are known by their resemblance to a shell, and environing the flesh in the middle half way round; as they grow, the flesh disappears, leaving a distinct hollowness on the inside. In six months, they usually grow about a quarter of an inch high, or more; and when a horse is six, they will be near half an inch about the gums.

When a horse is full six years old, the cavities in the corner-teeth begin to fill up, and turn to a brownish spot, like the eye of a garden bean. This mark becomes very faint, as the horse approaches his seventh year. At eight, the mark generally disappears; though some retain the vestiges of it a long time. After this, a horse is said to be past mark, as it requires a great deal of experience to form a tolerable guess of his age.

In order to make a very young horse or colt appear older than he is, horse-dealers sometimes pull out the foal-teeth: but this trick may be detected by feeling along the edges where the tushes grow, for they may be felt in the gums before the corner-teeth are put forth; but if the corner-teeth come in some months before the tushes rise in the gums, there is reason to suspect that the foal-teeth have been pulled out at three years old. Sometimes a mark is burned with a small hot iron; but this deception is also easily discovered, because this mark is generally blacker, and stronger impressed, than the true one.

Some horses have but indifferent mouths, even when they are young; while others retain marks of freshness and vigour till they are sixteen years old and upwards. When a horse becomes old, his gums wear away insensibly, leaving his teeth long and bare at the roots; the bars of the mouth become dry and smooth, and the eye-pits sunk and hollow. Grey horses in old age turn very white; and black ones grow grey over their eye-brows. The back also grows hollow, the joints stiff, and the aspect becomes ghastly and melancholy.

5. Abuse of Medicine.

It is a very common practice, among grooms and farriers, to bleed and physic a horse both in the spring and fall of the year, though he be in ever so good health and condition. If he be destined to undergo any extraordinary exertion, as racing or hunting, it is judged absolutely necessary, by these sagacious practitioners, to prepare him by bleeding, purging, and sweating in a hot stable. Nothing can be more absurd and dangerous; for if we give medicines to an animal in a healthy state, we either excite the organs to some unusual exertions, or we check those exertions which are natural and healthy, and in either case we must do harm. Besides, the habitual use of medicines renders them less efficacious when necessary; while the use of some remedies may be attended with dangerous consequences. Frequent bleeding tends to produce fatness; and the too frequent use of cordials and astringent stimulants lays the foundation of apoplexy, palsy, and other dangerous disorders. It cannot be too often repeated, that medicine should never be given to prevent disease, and that health is best preserved by the proper regulation of diet, exercise, and cleanliness.

6. Forms of Medicine.

The most usual forms in which medicine is exhibited to horses and cattle are those of ball, powder, drench, clyster, ointment, poultice, and fomentation.

7. Balls.

One of the most common and convenient forms in which internal medicines are administered in farriery is by ball, or bolus. They should be prepared shortly before they are to be used, as exposure to the air renders them hard and dangerous. When the horse's jaws are too narrow to admit the hand, the ball may be fixed on the end of a stick or cane moderately pointed, or, what is better, placed loosely in a kind of small cup at the end of the cane, and thus thrust to the back of the throat.

The administering the ball requires considerable care and dexterity. The animal's mouth is usually kept open by a *balling iron*, which is formed like a ring, covered with a cloth, and having an opening sufficient for admitting the operator's hand. The ball being shaped like an egg, the operator should draw out the tongue of the animal with the left hand towards the left side, and introducing his right hand, with his fingers surrounding one end of the ball, place it adroitly beyond the root of the tongue; then instantly letting go the tongue, and permitting the horse to raise his head, the ball will be gradually swallowed. If the ball has a disagreeable taste, it ought to be wrapped in wafer paper. Should the ball be composed of hot or stimulating ingredients, the horse should be allowed to drink *before* it is administered; and if the ball contains arsenic, corrosive sublimate, blue vitriol, or such like substances, a considerable quantity of some mucilaginous drink, as water-gruel or linseed-tea should be given. It is always better to mix up the ball with molasses, honey, or extract of liquorice, softened with water, than with gummy substances, which are apt to become hard. Some people are very expert in giving balls without the use of any instrument; and this when it can be done, is by far the best mode.

8. Powders.

Antimony, sulphur, nitre, and some of the aromatic seeds, are usually reduced to fine powder, and mixed with the corn and bran that is placed before the animal. Such medicines as do not readily dissolve in water should be moistened before mixing with the food. When horses seem to dislike medicine in this form, or when it appears to disagree with the animal's stomach, it ought to be administered in a different manner.

9. Drenches.

In compounding a drench, it is necessary that the substances composing it be thoroughly mixed with each other. Oils and balsams should be well combined with the watery part of the medicine, and dry substances should be very finely powdered. All mucilaginous substances, some resins, and many of the aromatics. may be properly given in this form. The best diluent is water, on a mucilaginous infusion.

Drenches are sometimes administered by a bottle; but this is a very dangerous instrument. They should always be given by a horn: the animal's head being raised, and the tongue held down, as in giving a ball. This operation is seldom performed with dexterity, and thus a considerable quantity of the medicine is frequently spilt. Drenches should never be given when the throat is in an inflamed or irritated state.

The great advantage of a drench is, that remedies exhibited in this form produce their effects very speedily, and are therefore well suited to urgent cases, in which it is necessary to give immediate relief.

10. CLYSTERS.

Almost every class of medicine may be advantageously administered in the form of a clyster; at least, all such medicines as may be thoroughly mixed with any watery fluid, so as to pass readily through a slender tube.

A clyster bladder should be that of an ox, and of the largest size, to the extremity of which should be fixed a pewter pipe, about twelve inches long, and about half an inch in diameter, having the extremity completely smooth, so as not to injure the internal coat of the bowel. Syringes are very improper instruments.

It is often necessary, previous to administering a clyster, to clear the great gut from the hardened excrement which it may contain. This is best performed by means of the hand, which should be well greased with oil or hog's lard, and the nails cut perfectly close, before it is introduced. The use of clysters has very properly become frequent, and is justly in high esteem.

11. OINTMENTS.

Ointments cannot be employed in farriery, as in the human body, to introduce remedies into the system, on account of the hair that covers the body of quadrupeds. They are chiefly employed as an application to sores, or in some cases of eruptions of the skin.

12. POULTICES.

Poultices should always be reduced to a softness, and repeatedly renewed. When intended to produce suppuration, they should be applied warm; but when applied to check inflammation, or to correct the unpleasant smell arising from foul ill-conditioned ulcers, they are usually laid on cold.

13. FOMENTATIONS.

Fomentations are composed of some infusion or decoction of herbs, and are used to soften or relax the parts to which they are applied. They are applied by wetting a large woollen cloth in the warm liquor, wringing it slightly, and laying it as warm as can easily be borne on the part to be fomented.

14. PURGES.

Purgative medicines are extremely useful, if administered with prudence; but, we repeat, they should never be given to a horse in health, in order to prevent disease. The intestines of horses are very long, and so constructed as often to retain a purge twenty four or thirty hours; and if it be of an irritating quality, considerable mischief may in consequence ensue. Hence the folly of giving strong medicines unnecessarily. It is but justice, however, to observe, that Mr. John Lawrence is of opinion, that the mischief done by purges is to be attributed to the coarseness of the medicine, rather than to its purging effect.

Some practitioners recommend purges to be given in the morning, when the horse is to be allowed to fast an hour. He is then to receive about two handfuls of hay, after which the ball is to be given, which is to be followed by a horn full of warm ale or water-gruel. He is then to fast another hour, when he is to be allowed a moderate quantity of hay. He should have all his drink a little warm, should be walked about gently during the remainder of the day, and should have a warm mash of bran at night. Next day, he is to be again moderately exercised till the purge begins to operate, and, if the weather is severe, he must be covered with body-clothes; but the stable should not be too warm when he returns.

Violent exercise, either before or after administering a purge, is highly dangerous, and frequently gives rise to fatal diseases.

15. PREPARING MEDICINE.

Before any medicine be administered to animals, it is necessary to ascertain the nature of the disease, as well as the effect and quality of the drugs used. Horses' powders are often much adulterated, and should be purchased only from such druggists as enjoy a good reputation. Seeds, when once powdered, soon lose their quality: they should therefore be purchased in their original state. The same rule should be observed in buying roots, barks, and gums. In making up the following receipts, troy weight is used, and wine measure in what relates to liquids.

DISEASES OF HORSES.

16. Surfeits.

Symptoms.—The surfeit assumes a different appearance in different subjects. In some it is indicated by the coat staining and assuming a dirty, rusty colour, and the limbs becoming full of dry fixed scabs; in others by small knots and lumps. In some by a moisture, attended by heat and inflammation, the humours being so sharp, and itching so violently, that the animals sometimes rub themselves raw; while others have no eruption whatever, and appear only lame and hidebound.

Causes.—This disease may proceed from excessive and immoderate feeding, or hard riding; but it may in general be attributed to a suppression of the insensible perspiration.

Cure.—A slight eruption may be removed by bleeding and diuretics; but when the horse is in high condition, a purge is the best remedy. The following proportion will generally suffice:

Barbadoes aloes, -	6 drachms.
Castile soap, - -	half an ounce.
Ginger, - - -	half a drachm.

Mixed in a ball with syrup of buckthorn.

The food to be scalded oats or bran mashes. When the purgative has ceased to act, the following ball may be given every night for three or four nights successively, viz.

Emetic tartar, - -	4 drachms.
Assafœtida - - -	4 drachms.
Ginger, - - - -	2 ounces.

To be mixed, and divided into four balls.

During the time the horse is under this treatment, he should be kept warm and daily exercised. If the scabs do not fall off, it will be proper to rub them with mercurial ointment.

In case the horse be lean, unhealthy, and hide-bound, the following drink will be of advantage.

Carraway seeds, -	1 ounce.
Gentian root, - -	half an ounce.
Zedoary root, - -	half an ounce.
Fenugreek seeds, -	half an ounce.
Mithridate, - -	half an ounce.

These ingredients, being finely powdered, may be given in a pint and a half of warm ale in the morning; to be repeated every second or third day while necessary. Here it is proper to observe, that no drink should be boiled that contains either seeds or roots. In case the humours be wet and itchy, that part of the skin from which there is a moist discharge may be bathed by the following lotion:

Blue vitriol, - - -	1 ounce.
Camphorated spirits of wine,	2 ounces.

In a quart bottle filled up with water.

This lotion to be applied daily, after first washing the parts with soft soap and warm water. While this wash is applied, the horse should also be given the emetic balls mentioned above.

Sometimes, after a surfeit is cured, the hair falls off those parts of the skin where the lumps and swellings were situated, and grow again of a different colour from the rest of the body.

17. The Mange.

Symptoms.—This is a cutaneous disease, affecting the skin, and rendering it tawney, thick, and full of wrinkles; especially near the mane, ears, loins, and tail. These parts generally become entirely deprived of hair; or, if any remains, it stands erect like hogs' bristles. The eruptions discharge a thick yellowish fluid; and the horse suffers a perpetual itching, and most of his time is employed in rubbing and biting himself, so that he soon loses his flesh for want of rest and quiet. This disease is highly contagious.

Causes.—This common but troublesome disease generally proceeds from want of cleanliness, unwholesome food, and a defective perspiration.

Cure.—It is never proper to bleed for this disease. The following internal medicine is recommended:

Antimony,	8 ounces.
Grains of Paradise,	3 ounces.

This, finely powdered and mixed with Venice turpentine sufficient to form the mass of proper consistence, must be divided into twelve balls, one of which to be given every other day. During this apply the following ointment:

Prepared hog's lard,	1 pound.
Sulphur,	half a pound.
White hellebore,	3 ounces.

Mix and add olive oil sufficient to make a soft ointment.

A moderate quantity of this ointment to be well rubbed with the hand every third day over the parts affected. If the food in the mean time be good and nourishing, and the horse kept clean and gently exercised, a cure will soon be effected.

In slight cases of the mange, an infusion of tobacco in ale grounds may sometimes effect a cure; but in very inveterate cases, the following ointment may be used, viz.

Mercurial ointment,	half a pound.
Powdered brimstone,	4 ounces.
Black soap.	2 ounces.
Crude sal-ammoniac,	1½ ounce.

To be mixed up with turpentine or oil of bays.

Those who prefer a lotion to an ointment may use the following, viz.

Powdered corrosive sublimate,	half an ounce.
Spirits of wine, - -	half a pint.
Water, - - - -	1 quart.

To be applied every third day, and on the intermediate days to wash the parts with soft soap and warm water.

Those who prefer using powders may give the following two or three days before the skin is dressed, and which may be continued while necessary.

Crude antimony, -	half a pound.
Nitre, - - -	half a pound.
Flour of sulphur, -	half a pound.
Cream of tartar, -	half a pound.

These ingredients being finely powdered and well mixed, a table spoonful may be put in the horse's corn, or mash of oats and bran, every night and morning.

When a horse is perfectly cured of this disease, his collar, gear, saddle, clothing, or whatever he wore during his illness, must be well washed with soap-suds, and rubbed over with the lotion recommended above. The stall, rack, and manger, should also be white-washed with quicklime, which in a few days may be washed off with clear water. These precautions should never be neglected.

18. THE FARCY.

Symptoms.—The horse appears dull, his skin feels tight and dry, and the legs, particularly the hind ones, swell suddenly to an enormous size. The small glands rise up in small lumps or knots, which farriers call *farcy-buds*. These small lumps are at first extremely hard and sore; but in a few hours they suppurate, and discharge an unhealthy ichorous matter. The edges of these ulcers have a bad and chancrous appearance; and the disease gradually advances until the whole body becomes infected, and partial swellings take place, particularly on the inside of the thigh and about the lips and nose, which last frequently terminates in the glanders. This disease is often very obstinate and difficult to cure.

Causes.—This disease may be brought on by the same causes which produce the mange; but it is more generally to be attributed to a suppressed perspiration, and also to hot and crowded stables, as it is very prevalent amongst waggon and post horses; for these poor animals, after being thrown into a violent sweat, are frequently ridden through brooks and ponds to wash them, or allowed to stand in inclement weather at an ale-house door; a culpable negligence, which frequently gives rise to the farcy.

Clater, and other ignorant farriers, erroneously suppose that this disease is seated in the veins! but every intelligent practitioner knows it proceeds from the diseased state of the absorbent or lymphatic vessels.

Cure.—As this is a very troublesome disease, spreads rapidly, and soon affects the whole system, it is always best to apply, as soon as possible, to some eminent and skilful practitioner; but if this cannot be conveniently done, the following mode of treatment may be adopted.

When the attack is confined to a single limb, with great swelling and inflammation, and the horse is in good condition, three or four quarts of blood must be taken, after which administer the following purge:

Barbadoes aloes, - -	9 drachms.
Castile soap, - - -	1 drachm.

With liquorice powder sufficient to make a ball. This to be given with bran mashes and lukewarm water; care being taken to place the horse where he may move about, but not to exercise him out of doors while the limb is in an inflamed state. In the mean time, the swelled part must be fomented with a warm decoction of camomile flowers; and a rowel may with advantage be introduced at the lower part of the chest. Directions for rowelling will be given in a subsequent part of the work.

When the disease has extended, the following ball may be given after the horse has been properly purged, viz.

Assafœtida, - - -	1 drachm.
Camphor, - - -	1 drachm.
Emetic tartar, - -	1 drachm.
Ginger, - - - -	2 drachms.

This quantity in one ball may be given for three nights successively, and, after missing one night, may be repeated until the disease is removed.

When the whole system is affected by the disease, the extremities swelled, the buds numerous, and the animal assumes a poor haggard aspect, the following mercurial ball may be given, viz.

Corrosive sublimate, -	1 scruple.
Emetic tartar, - -	1 drachm.
Opium, - - - -	10 grains.

With liquorice powder sufficient to make a moderately sized ball.

The horse to have a good nourishing diet, such as malt mashes, with carrots or brown sugar mixed with his corn. He must not be exposed to wet or cold, and his clothing should be warm. The dose of sublimate may be gradually increased to two scruples. Should the salivation be too severe, and the mouth and throat become swelled and sore, give a laxative composed of

Epsom salt, - - -	8 ounces.
Sulphur, - - - -	2 ounces.

Mixed in a ball with liquorice powder and treacle.

Some recommend the following:

Barbadoes aloes, - -	6 drachms.
Cream of tartar, - -	1 ounce.
Ginger, - - -	half an ounce.
Nitre, - - -	half an ounce.
Aniseeds, - - -	half an ounce.

These to be reduced to a fine powder, and dissolved in a pint and a half of warm ale.

A horse afflicted with farcy should be separated from those in health; and when perfectly recovered, if the season be favourable, a run of grass will be of great advantage.

19. THE GLANDERS.

Symptoms.—This disease, notwithstanding the assertions of old farriers, is totally distinct from the *farcy*. In the early stage of the glanders, there is generally a discharge of a whitish glary fluid from one nostril, which is highly coloured and inflamed, while the other nostril is of a pale flesh colour. When in this state, there is usually one or more ulcers up the cavity of the nose; and the gland under the jaw, on the same side as the affected nostril, becomes enlarged. In case of colds, the discharge may be from both nostrils. Sometimes also the discharge from the glanders is from both nostrils, and the general health of the animal may for months continue unimpaired; but if this discharge proceeds from cold, it will be accompanied by dullness, loss of appetite, a difficult breathing, or an increased pulse. When the disease becomes inveterate, the viris is very offensive and fetid, composed of yellow or green colours, and intermixed with red or bloody streaks. After this, the bones and cartilages of the nose are eroded by the malignity of the discharge; and the whole frame, particularly the lungs, becomes affected: the respiration also becomes difficult, the discharge profuse, and the appetite decreases. A consumption then ensues, and the animal dies.

The symptoms of this disease should be attentively observed, and marked with a nice discrimination; as in some cases of a violent cold, both a great degree of inflammation and a swelling of the glands, and even an ulceration of the nose, may take place, and a valuable animal be doomed to destruction under the mistaken idea that he is affected by the glanders.

Causes.—The primary cause of this disorder has never been ascertained; but it prevails most in crowded stables and in large cities. Its ravages are frequently extensive, and sometimes prove fatal to the prosperity of carriers and coach-keepers.

Cure.—This is an incurable disease; and though some books of farriery are swelled out with pompous recipes for its cure, it is only an imposition on the credulous, and in many instances may be productive of much mischief. Instances have indeed occurred of the discharge being wholly suspended for a while, particularly after the animal has been at grass for some time; but the symptoms invariably return, and there is not a well-authenticated instance on record of the glanders having been cured.

As soon as it is clearly ascertained that a horse has the glanders, he should be immediately removed from all other horses, and kept by himself. The rack, manger, and other places which he may have touched, should be very carefully scraped with knives, and well scoured with soap, sand, and boiling water. This operation should be repeated, and then the whole surface of all these parts whitewashed with a thick coat of lime and water. After a few days, this may be washed off, and the stable used again with safety. Fumigations of brimstone, &c. may be used, but must not be depended upon without the preceding precautions. It is quite unnecessary to bleed and purge the other horses that may have been in the stable, as this can have no effect in preventing contagion.

Where a person keeps a number of horses, it is always best to destroy a glandered horse as soon as possible. It is indeed highly improper to keep such a diseased animal in any case, as the property of others is thereby continually exposed to danger.

It has been observed, that one-third of the hackney coach horses in London are glandered: and we see them frequently in carts belonging to poor men, who purchase them for a mere trifle, and, as a horse under this disease may continue to work for three or four years, they often turn out to be profitable. But still there is some danger of the contagion being thus propagated, except the glandered horse be carefully kept in a stable by itself, and never suffered to come into contact with a healthy horse. The keepers of country ale-houses should be careful never to admit a horse to bait in their stables which appears afflicted by this dangerous disease, as many people have suffered severely from a negligence of this kind.

From a great variety of experiments, made by experienced and well-educated farriers, it has been demonstrated, that no medicine is a specific for the glanders. However, it is to be hoped that some regimental veterinary surgeon, who can institute a series of experiments, in a barrack horse hospital, may discover some effectual cure for this disease.

M. St. Bel, the first professor of the veterinary college in London, enjoyed several opportunities at Lyons in making experiments on glandered horses: but although he varied his treatment apparently with great skill and boldness, yet he confesses that he never succeeded except in one instance, the particulars of which he has not communicated. He concludes by observing, 'that many circumstances have convinced him, that the virus of the glanders has more activity in southern than in northern countries; and that its progress is more rapid in the mule and the ass than in the horse, but that the former is not so subject to receive it by infection, or contact, as the horse is.'

Some farriers succeed in persuading people that they have really cured the glanders; but on examination, it will be found that these wonderful cures have been effected only in cases that *resembled* the glanders.

20. FEVERS.

Symptoms.—A fever is denoted by great restlessness, and ranging from one end of the rack to another, beating of the flanks, redness and inflammation of the eyes, and a parched and dry tongue. The horse also loses his appetite, nibbles his hay without chewing it, and is frequently smelling to the ground; he dungs often, but little at a time, and in small broken pieces, and sometimes stales with difficulty; his urine is highly coloured; he is always craving for water, and drinks often, but little at a time; and his pulse beats full and hard.

'The best criterion of fever in the horse,' says Mr. Lawrence, 'is the pulse. The best situation for feeling it is just under the edge of the jaw-bone, where the facial artery passes on to the side of the face. In this situation, the artery is covered by the skin only; and, as it rests against the bone, its strength or weakness of pulsation may be ascertained with the nicest exactness and accuracy. When the animal is in health, the pulse generally beats from thirty-six to forty strokes in a minute. The pulsation is regular, and the artery feels neither hard nor soft, but perfectly elastic; but when under the influence of fever, the pulse is sometimes increased to more than double its natural number of beats, and the artery becomes frequently so hard and rigid as to resist the pressure of the finger, and to slip aside from under it.'

Causes.—A simple fever may proceed from various causes, such as an obstructed perspiration, arising from violent exercise and an exposure to sudden colds or heats, a distention of the stomach, or from any other cause that tends to produce a degree of inflammation.

Cure.—The first part of the cure is copious bleeding. If the horse be strong and in good condition, three or four quarts should be taken; and the bleeding should always be repeated until an alteration of the pulse takes place, the hardness of the artery be removed, and the yellowish or buffy coat on the surface of the blood becomes thinner; after which, administer the following clyster, viz.

Marshmallows, - -	2 handfuls.
Camomile flowers, - -	1 handful.
Fennel-seed, - - -	1 ounce.

This to be boiled in three quarts of water until it be reduced to two; then strain off the liquor, and add four ounces of treacle, and a pint of linseed oil.

This clyster should be repeated every other day, and on the intermediate day the following drink:

Glauber salts, - - -	4 ounces.
Cream of tartar, - -	4 ounces.

Dissolved in barley-water, and a drachm of the powder of jalap added.

When the dung is not particularly hard and knotty, a pint of the following infusion may be given four times a day.

Camomile flowers, - -	a handful.
Balm, - - - -	a handful.
Sage, - - - -	a handful.
Liquorice-root sliced, -	1 ounce.
Nitre, - - - -	3 ounces.

These ingredients to be infused in two quarts of boiling water; when cold, strain it off, and squeeze into it the juice of two or three lemons, and sweeten it with honey.

In the mean time, the horse's diet should be light, consisting of scalded bran, and occasionally he may have a handful of picked hay put into his rack. His drink should be a little warmed, and given often and in small quantities; his covering should be moderate; his litter kept clean; and when he begins to recover, his exercise should be gentle.

Mr. White distinguishes fevers into two kinds; the *simple* and *symptomatic.* The latter kind usually proceeds from some external wound, or is indicative of internal inflammation, and must be treated accordingly by copious and early bleeding, with rowels and blisters. This disease is not preceded by shivering, like the simple fever; nor is it so sudden in its attacks. In case of simple fever, this gentleman recommends, after bleeding, and in case of costiveness, to give a pint of castor oil, or the oil of olives, and to inject a clyster of warm water-gruel. He also prescribes the following laxative drink, and which the writer begs leave to recommend:

Aloes Barbadoes, -	3 drachms.
Prepared kali, - -	1½ drachms.
Castor oil, - - -	4 to 6 ounces.
Mint water, - -	4 ounces.
Pure water, - -	4 ounces.

These ingredients mixed will serve for one dose. After the operation of this laxative, the following fever-powder to be given:

Powdered nitre, - -	1 ounce.
Camphor, - - -	3 drachms.
Tartarised antimony, -	2 drachms.

These to be mixed and given in one dose. The usual precautions of warm water and mashes, with frequent hard rubbing, must be taken. When the fever runs high, rowels to be inserted about the chest and belly, in order to prevent the recurrence of internal inflammations. When the disease appears to be going off, the horse looking more lively, and his appetite returning, let him be led out in some warm situation, and give now and then a malt mash for recovering his strength.

Let it be always remembered, that, in every case of fever, bleeding, and clearing the intestines by mild purgatives and clysters, are of the first importance; and that all cordial balls or drinks, while the disease continues, must have very injurious effects.

21. THE STAGGERS.

Symptoms.—This disease is sometimes, and very properly, called the *apoplexy.* In some cases the horse drops down suddenly in a state of insensibility; but, in general, it comes on progressively. It is first denoted by a heaviness and sleepiness in the eyes, and almost a continual hanging of the head, accompanied by a considerable degree of feebleness. As the disease advances, the animal presses his forehead against the wall with great force; and when he is removed, he appears aroused and alarmed, but returns to his former position immediately. At length the symptoms increase; and the brain becomes so much affected as to produce frenzy and death. In this disease there is little apparent alteration in the pulse or the motion of the flanks.

There is also a slight and temporary state of the staggers, called the *Megrims,* which attacks some horses as soon as the circulation of the blood is increased by exercise. The animal in this case suddenly stops, and shakes his head; and if improperly urged forward, the fit increases, and he falls.

Causes.—The staggers, or apoplexy, may arise from various causes; but it most generally proceeds from some derangement in the digestive organs. It is sometimes occasioned by blows on the head, so as to cause compression of the brain. In general, however, it is extremely difficult to discover the real cause of the disease.

Horses that are voracious feeders are very subject to this disease. Ignorant grooms and waggoners will often steal corn to feed their horses; and sometimes a greedy horse, in stables not separated by stalls, will both eat his own allowance and also his neighbour's. Thus the stomach is overcharged, and corn is frequently formed in it into an undigested pulp. Sometimes also the digestion is hurt for want of a sufficient quantity of water to drink. Horses should always be watered four times in the course of a day. It is a most absurd and hurtful prejudice, to suppose that water has a tendency to make horses broken-winded.

Mr. Gibson, an intelligent and experienced farrier, attributes this disease in many cases to a stoppage in the stomach and intestines, which sometimes proves fatal when not rightly understood. 'These stoppages,' he says, 'proceed from various causes, and only affect the head when they happen to be of some continuance. Sometimes they are caused by full feeding, with the want of air and sufficient exercise, especially in hot dry weather, and in constitutions naturally hot; but most usually from the quality and nature of their food, as bad hay, or any other bad provender, or rank clover, when it has imbibed moisture from the damp air, which renders them so tough that they lie like a wad, and distend the guts so as to impede their proper functions. Other things have also the same effect, as soiling horses with any kind of green herbage, such as vetches, or clover, when it happens to be grown too old and tough, and has lost its succulency, especially when it has been cut too long before it is used. Any of these may cause stoppages in the first passages, and sometimes excite such disorders as by their continuance affect the head in a very strong manner.'

Cure.—As soon as the horse is perceived to have this distemper, he must be copiously bled in the neck vein; which must be repeated, if his strength and the nature of the disease requires it. After bleeding, administer a ball composed thus, viz.

Aloes Barbadoes, - -	1 ounce.
Calomel, - - -	2 drachms.
Ginger, - - - -	2 drachms.

These mixed with a sufficient quantity of honey.

Apply also a clyster prepared by mixing three quarts of oatmeal-gruel, three ounces of common salt, and half a pint of olive oil. If the disease continues after this treatment, put a rowel under the jaw, and another in the chest, which ought not to be removed till at least a fortnight after the horse is recovered.

Other experienced practitioners in the veterinary line recommend, in cases of confirmed staggers, to take at least six quarts of blood at once: and when this operation is completed, to rub a blister on the upper part of the neck, on both sides of the mane, just behind the ears. The blister to be composed thus:

Cantherides powdered. -	2 drachms.
Spirits of wine, - -	2 ounces.

Mixed in a phial.

After which the following purge to be given:

Calomel, - - -	2 drachms.
Barbadoes aloes, - -	1 ounce.
Ginger, - - - -	1 drachm.

With honey sufficient to make a ball.

The horse to have bran-mashes, and water with the chill taken off to drink.

If the symptoms appear likely to become violent, the horse should be removed into an open box, and the halter-rein be tied to the centre of the ceiling, or to a beam, by which means the animal will be prevented from running against the wall, and bruising his head.

When the staggers arise from a stoppage in the stomach and intestines, the eyes of the animal appear swollen, his mouth contracted, breath and cough short; the abdomen is distended; he stales little, and strains much when going to dung. In this case, Mr. Gibson advises the following mode of cure:—'Let some person that has a small hand rake the horse thoroughly, and bring out the dung from the rectum, which is generally hard and made up of little small balls of a blackish colour, and quite dry. After this, let him have plenty of emollient oily clysters, made of mallows and such like; but in places where these cannot readily be got, they may be made of pot-liquor or water-gruel.

'To two quarts of this liquor may be added a pint of linseed oil and half a pound of treacle.

'This should be given milk-warm, and repeated every day, at least till his dung comes away with ease, and grows soft. His diet should be the best hay, scalded bran, or boiled barley, till he has been thoroughly emptied, and for some time afterwards. At first the dung that comes away in the clysters will be in small hard balls, and sometimes along with it a putrid slime, which when discharged gives great relief; but, by the continuance of the clysters and the open diet, the dung soon alters, and comes away in such great loads, that it appears wonderful how it could have passed through the fundament; but as soon as this happens, it brings sure relief, and a passage is made for gentle purges, which, in this case, are always of great use.

'Take—

Lenitive electuary,	- -	4 ounces.
Cream of tartar,	- -	4 ounces.
Brown sugar,	- - -	2 ounces.

'Mix them in a pint and a half of ale, the ale to be made hot, that the cream of tartar may be the more easily dissolved in it; after that the sugar; and last of all, the lenitive electuary.

'This being given in the morning upon an empty stomach, blood-warm, will probably begin to work before night; and it seldom makes a horse sick, as the stronger purges are apt to do when he is full and costive, so that he will drink warm water, or warm gruel, without reluctance. It may be repeated three or four times, allowing always two or three days respite between each draught, keeping him to an open diet, with proper exercise, till he recovers his usual vigour.

'By this method several horses have been cured that were much affected with convulsive symptoms, and the event plainly shewed that this affection was owing to a stoppage of the alimentary functions.'

22. THE EPILEPSY.

Symptoms.—When a horse is attacked with the epilepsy, he reels and staggers, and his eyes seem fixed in his head. He appears quite stupid, and dungs and stales insensibly, runs round, and falls suddenly. Sometimes he is immoveable, with his legs stretched stiffly out, as if he were dead, while his flanks work violently; at other times, however, there is a violent motion and shaking of the limbs. When the fit is going off, he generally discharges from the mouth a white and dry foam.

Causes.—The epilepsy sometimes proceeds from a plethora, or fullness of blood, and often from violent exercise or surfeits, or indeed from any of the causes that produce lethargy or the staggers.

Cure.—In old horses this disease generally proves incurable; but in ordinary cases, the following medicine may effect a cure:

Asafœtida, - - -	2 drachms.
Camphor, - - -	1 drachm.
Emetic tartar, - -	1 drachm.

Which must be made into one ball, with liquorice-powder and honey, and given every twelve hours; care being taken first to open the bowels by clysters. Those who prefer giving an opening drink, may administer the following twice in twenty-four hours:

Castor oil, - -	half a pound.
Prepared kali, - -	half an ounce.
Tincture of opium, -	half an ounce.
Powdered ginger, -	1 ounce.

To be given in a pint of warm gruel.

23. The Palsy.

Symptoms.—When a horse is seized by the palsy, he loses the use of some particular member, especially one or both of the hind-legs, attended by shaking and involuntary motion. When the brain is affected, the use of one side is totally taken away, the horse falls suddenly, and the muscles of the affected part becomes so flaccid and relaxed, that all attempts to rise are fruitless. This last case is called *Hemiplegia.* Horses that lie out on cold, wet ground, are often attacked with a numbness in their limbs; but this may be distinguished from the palsy by the head being unaffected.

Causes.—The palsy may proceed from high feeding and want of sufficient exercise, and also too hard working and want of good wholesome food. Sometimes it arises from confined bad air, or from noxious fumes; but when it is the result of mere old age, the case is very hopeless.

Cure.—It is very seldom that paralytic disorders are removed in old horses, particularly when the disease attacks one whole side. Even a partial palsy in old horses may be alleviated, but not removed; but the disease in young horses may often be cured without much difficulty. The properest medicine is the following purge:

Barbadoes aloes, - -	8 drachms.
Castile soap, - - -	2 drachms.
Ginger, - - - -	2 drachms.

Mixed in one ball. The food to consist of mashes and lukewarm water.

Then apply the following stimulating embrocation:

Oil of turpentine, - -	4 ounces.
Camphor, - - -	1 ounce.
Common soap, - - -	1 ounce.

Which must be well rubbed into the affected part by the hand, and, as fast as it sinks in, to be renewed; and thus repeated till the numbness in the limb goes off. If necessary, the effect of this liniment may be increased, by adding one ounce of tincture of cantharides. The free use of a hard brush will also be found extremely useful.

If one side of the head be affected, it ought to be well rubbed with liniment; but no internal medicine should be used.

24. RHEUMATISM.

Symptoms.—This disorder, as in the human subject, may be divided into two kinds, the acute and the chronic. The first is attended with some degree of fever, but the latter is a mere local affection.

A horse attacked by the rheumatism moves the affected limb without bending the joints of it, which is seldom the case in other kinds of lameness. Another mark of rheumatism is when the lameness subsides by exercise, and returns again when the animal becomes cool. Sometimes the shoulders are affected; but the confirmed rheumatism is usually seated in or about the hip joint. When the disease attacks the loins, the horse feels extreme pain, the muscles in those parts lose their motion, and he is obliged to stop short with all his legs alike; nor does he ever lie down, from a consciousness of being unable to rise again without great pain and difficulty.

Causes.—This disease is generally to be attributed to some sudden exposure to wet and cold; which transitions are always dangerous to animals which are usually confined in hot and close stables.

Cure.—The best farriers recommend to begin a cure by administering a purge, and applying strong spirituous mixtures; giving the horse gentle exercise, and keeping him warmly clothed.

After the purge has ceased to operate, take the following:

Asafœtida, - - -	2 drachms.
Sulphur, - - -	2 drachms.
Ginger, - - - -	1 drachm.
Soap, - - - -	2 drachms.

And mix these ingredients into a ball with treacle. Repeat the same for three or four nights.

Some recommend the following ointment for rubbing the parts affected:

Hog's lard, - - -	2 ounces.
Camphor, - - -	2 drachms.
Oil of turpentine, - -	6 drachms.
Spirits of sal-ammoniac, -	2 drachms.

The whole to be mixed together. Warm bathing is also recommended; but this remedy is both inconvenient and expensive. In obstinate cases, a summer's run at grass would be of great service.

25. Of Worms.

Symptoms.—Worms are so common in horses, that very few escape, at some period, of being troubled with them. They are usually comprised in two divisions, viz. *bots* and *ascarides.*

Bots are generally found sticking in clusters to the insensible parts of the stomach. They resemble maggots, and are about half an inch in length, and the same in circumference round the thickest part. They are furnished with two sharp feet from one end of their bodies, by which they retain a firm hold; and as the surface of the stomach where they have taken hold inflames and ulcerates, they pierce still deeper, until, in some instances, they penetrate quite through the stomach. In the months of May or June they leave their position, and, descending the anus, are carried off with the dung. The insect now remains for some time in the chrysalis state. When the fly comes out, and the female is properly impregnated, she carefully selects a proper subject (for this fly evidently prefers one horse to another), and deposits her eggs on the inside of the fore-legs and some parts of the shoulders. These eggs are very visible, in the form of little yellow nits, which are fastened to the hair with some kind of a glutinous substance. Whenever the horse bites his legs, from itching or any other cause, some of these eggs enter the mouth, and pass into the stomach, along with the saliva, where they are hatched and become the bot. It is a most remarkable instance of instinct, that the fly never deposits its eggs on any part of the horse which he cannot reach with his mouth. Some writers suppose that worms are useful and beneficial to horses in many cases; and Mr. Bracey Clarke, who has given a most accurate and scientific description of the bots, concludes that this animal is the natural medium for their propagation.

The *ascarides* are usually found in the rectum. They are generally white, but sometimes reddish, and in form resemble the eel. They are extremely troublesome, and expose horses to the gripes and other irritating actions in the intestines. A horse troubled with these insects looks dull and fatigued, and will frequently go very sluggishly, which coachmen sometimes mistake for laziness, and punish accordingly. The animal's hair stares as if he was sickly, and he often strikes his belly with his hind feet as if griped; but he neither lies down nor rolls as in the gripes. However, the most decisive sign of worms is when they are voided.

There is another kind of worms, called the *teretes*, or earth-worms, which are sometimes found in horses, but are neither very troublesome nor dangerous. They may be distinguished from the ascarides, as being a little larger and of a red colour. They are commonly voided about the latter end of autumn.

Mr. Gibson says, 'The signs of worms in horses are various, according to their different kinds. The bots that many horses are troubled with are found sticking to the rectum, and are often thrust out with the dung, along with a yellowish coloured matter like melted sulphur.

'They are apt to make a horse restless and uneasy, and to rub his breech against a post. The season of their appearing is usually in the months of May or June, after which they are seldom to be seen, and rarely continue in any one horse above a fortnight or three weeks. Those that take possession of the membranous parts of the stomach are more irritating and dangerous in causing convulsions, and are seldom discovered by any previous signs before they bring a horse into violent agony.'

Causes.—Some have supposed that the bots are frequently caused by confinement in stables and unwholesome diet. Horses which want energy in the functions of the stomach and intestines, or are fed foully, or pampered for sale, are the most disposed to breed the ascarides. Sound healthy horses are seldom troubled with these insects.

Cure.—The writer quoted above says, that horses troubled with worms may be relieved without much expense or trouble, only by giving him a spoonful of savin, once or twice every day, in oats or bran moistened; and if three or four cloves of chopped garlic be mixed with the savin, it will do better, for garlic is of great service in these complaints. 'Horses that are troubled with bots,' says Mr. Gibson, 'ought to be purged with calomel and aloetic purges before the weather grows too hot; and if they be kept to a clean diet after this, it will be a great chance if ever they are troubled with them any more. As the bots generally happen about the grass season, those horses that are turned out to grass often get rid of them there, by the first fortnight's purging; and those who have the convenience of a good pasture for their horses, need not be very solicitous about giving them medicines.'

The following prescription is strongly recommended:

Calomel, - - -	1 drachm.
Aniseeds, in powder, -	half an ounce.

Treacle enough to make a ball.

This to be given in the evening, and the next morning the following is to be administered:

Soccotrine aloes, - -	8 drachms.
Ginger, - - - -	2 drachms.

Treacle enough to make a ball.

The foregoing bolus and purgative ball is ordered to be repeated, after an interval of nine days, until the horse has taken three doses. Then the following powder is advised daily for about a month. This process does not require any change of diet, or involve any hazard from the effects of cold.

Ethiop's mineral,	half an ounce.
Crude antimony prepared,	half an ounce.
Aniseeds, in powder,	half an ounce.

Mix them together.

The treatment of the horse during this course of worm-medicine, is the same as in the usual practice of administering purges. 'Some prefer,' says Mr. Denny, 'giving Barbadoes aloes for the removal of worms, thinking it more efficacious than the soccotrine; at the same time it exposes a horse more to gripes and other dangerous attacks, unless it be managed with great care.' The following Gibson recommends as a cheap purge of this kind:

Barbadoes aloes,	1 ounce.
Salt of tartar,	2 drachms.
Ginger,	1½ drachm.
Oil of amber,	a tea-spoonful.

Syrup of buckthorn sufficient to make a ball.

Mercury is a favourite remedy against worms. The following appears the best mode of exhibiting this powerful and dangerous medicine:

Quicksilver,	2 drachms.
Venice turpentine,	half an ounce.

Rub the quicksilver in a mortar with the turpentine till no particle of the former appears; then add—

Oil of savin,	30 or 40 drops.
Soccotrine aloes, powdered,	half an ounce.
Ginger,	1 drachm.

Syrup of buckthorn sufficient to make a ball.

When the horse has gone through a course of mercurial purges, give the following drink twice or thrice a week, viz.

Camomile flowers,	a handful.
Rue,	a handful.
Horehound,	a handful.
Liquorice root,	1 ounce.

Boil these in a quart of soft water about fifteen minutes in a covered vessel, and keep it covered till cold; then strain it through a coarse canvas, and give it in the morning on an empty stomach.

Very great caution is necessary in administering mercurial purges. The horse should be kept warm, and have bran mashes and water with the chill off.

Emetic tartar is much recommended for destroying the ascarides. Sulphur is also an excellent remedy: it may be given night and morning, to the quantity of an ounce. But let it be well remarked, that no medicine has yet been discovered, capable of destroying or bringing away the bots before the regular period, when they quit the horse spontaneously. It is, however, very easy to prevent their propagation, by cutting off the hair with a pair of scissors where the worms are deposited, or by a frequent use of the curry-comb or brush. A run at grass, by invigorating the system, contributes much to the removal of the ascarides. Frequently, a horse takes a natural purging, when a great number of these troublesome insects are ejected.

26. Broken-wind.

Symptoms.—This disease is indicated by the breathing of the horse altering from its natural state, and, from an easy, gentle, and uniform respiration, to a painful, laborious, heaving, and violent agitation of the flanks, which rise from several successive undulations to an extreme height, then suddenly relax, and fall downwards beyond the natural extent of these parts: the nostrils become dilated, and the face emaciated and contracted. Such are the symptoms in aggravated cases; but the disease exists in every degree of mildness or violence.

In the earliest stages of this disorder, the abdomen is painfully contracted; but in cases of long standing, it becomes large and pendulous, as may be observed in many instances amongst horses employed in carts or by farmers.

An experienced writer says, that 'horses are differently affected in this disorder. The respiration is quickened in some without much heaving, and the abdomen in such is contracted and hard, instead of being large and pendulous. It is sometimes attended with a cough, which is not deep, but short and hard, as though the lungs resisted perfectly the impulse of this exertion. On exercise, the cough is much increased, after which he seems relieved; his head in coughing is held low, and his neck stretched out as though he endeavoured to bring something from his throat. The face has a rigid emaciated appearance; resembling, though less violent, that contraction which attends the lock-jaw. The eyes are often yellow, from diffused bile; the nostrils dilated and rigid. The appetite is not affected by it; if any thing, it is increased.'

When the stomach is loaded, especially with water, all the symptoms of this disorder are more easily remarked, especially on exercise. This is a sure mode of ascertaining its existence. On the other hand, when a broken-winded horse has had two or three hours' exercise, and the stomach and intestines are emptied, no perceptible indication of this disorder can be perceived.

Mr. Lawrence observes, that 'the disease of broken-wind seldom comes on suddenly, but is generally preceded by habitual coughs and colds, and these causes are considerably aggravated by overfeeding and want of sufficient exercise. In regard to coughs, there is this perceptible difference between those which are recent and inflammatory, and those which are chronic or of long standing. In the first there is generally some discharge from the lungs, but in the latter there is seldom any discharge whatever.

'As the horse does not expectorate through the mouth, the mucus is coughed up into the nose, from whence it is afterwards discharged by the action of sneezing. But in the old or dry cough, as there is no mucus coughed up, so the horse does not sneeze after coughing; and much reliance is placed on this circumstance by dealers, in forming their opinion as to the state of a horse's lungs.

'It is, therefore, their custom to pinch the upper part of the trachea, or windpipe, to force the horse to cough, so as to enable them to ascertain whether he is sound in his wind; and although this is by no means an infallible criterion, still there is a very manifest difference between the cough of a sound horse and one that is broken-winded, inasmuch as the first is clear, full, and sonorous; whilst the latter is short, and generally attended with a wheezing noise, and mostly accompanied by a discharge of wind from the fundament, in consequence of the sudden contraction of the abdominal muscles in the effort to expel air from the lungs. Many curious tricks are said to be practised by the lower class of horse-dealers, such as giving the animal a large quantity of oil, and sometimes a quantity of leaden shot; both equally ridiculous and unavailing. But the most absurd practice of all is the custom of making an artificial and additional opening to the anus, with a view of more easily letting out the wind with which horses in this state are particularly troubled. This flatulency, or collection of air in the intestines, has no connexion whatever with the cavity of the chest, and the only inconvenience which it occasions arises from its distending the belly, and consequently impeding in some degree the action of the lungs. It is produced entirely from that indigestion which always accompanies more or less a diseased state of the lungs; for as a free and perfect respiration is essential to the general health and vigour of animal bodies, so the want of it must naturally impair the action of the stomach, and produce the inconvenience above mentioned.'

Causes.—All disease in the lungs proceeds from inflammation, which, when violent, ends in mortification and death, but when relieved, frequently lays the foundation for a permanent cough or broken-wind.

It has been discovered, after a number of dissections in the veterinary college, that broken-wind is occasioned by the extravasation of air in the substance of the lungs, which Mr. Coleman imagines may proceed from a rupture of the air-cells. Admitting this fact, that the membranes of the lungs are thus divided and separated by air, and it is easy to account for the various symptoms which indicate this disorder.

Cure.—This is an incurable disorder. Some relief, however, may be obtained by attending to diet and management. The animal should be fed with the best hay and bran mashes, and scalded oats every day. It is usual to put the crib upon the ground when he has a discharge from his nostrils. Water should be given frequently in small quantities, after which a little gentle exercise will be found serviceable. Some recommend the following balls, as useful for all thick-winded horses:

Barbadoes tar, - - -	4 ounces.
Venice turpentine, - -	4 ounces.
Castile soap, - - -	4 ounces.
Rust of iron, - - -	6 ounces.
Prepared kali, - - -	2 ounces.

Beat up together and mixed with—

Carraway seeds, - -	2 ounces.
Elecampane, - - -	2 ounces.
Ginger, - - - -	2 ounces.

These to be reduced to powder, and mixed with treacle and liquorice powder in a ball, and given every other day. But it is necessary to repeat, that no cure in this disease is to be expected, though perhaps some temporary relief may be afforded.

There exists a foolish, cruel, and barbarous notion, that broken-wind and other disorders of the lungs proceed from drinking too much water. Now, a horse left at liberty in the fields, and that has an uncontrolled access to water, never injures himself by drinking too much; though when he is confined in a stable, supplied with dry food, and kept short of water, the digestion is injured, and the excessive heat of the stomach renders him so eager for water that he is very apt to drink too much. But disorder in this case is occasioned by a want of water, and it is absurd to think of curing it by continuing the error. Horses that eat dry food, and work hard, require a great quantity of water to keep them in good health, which ought to be given frequently; in which case, too much will never be drunk at once.

27. Roaring.

This is an imperfection which may be produced by the same causes that give rise to the broken-wind. Dealers attempt to discover the disease by striking the horse under the belly with a whip, and turning him round suddenly at the same time. If the horse grunts during this process, it is considered as a proof that he is a roarer.

28. Crib-biting.

This is another disease of the lungs, for the prevention of which, as well as roaring and broken-wind, we refer to the directions given in the subsequent article; for if an inflammation of the lungs be treated properly, these troublesome and incurable complaints will scarcely ensue. Crib-biting is the habit some horses have of biting their manger, accompanied with a convulsive motion of the wind-pipe.

29. Inflammation of the Lungs.

Symptoms.—Inflammation of this organ is indicated by a shivering, and a very sensible coldness in the ears and legs, while the horse appears dull, and droops his head. As the disease advances, the breathing becomes difficult, accompanied by a short and quick motion of the flanks. The mouth feels hot, and a sensation of pain compels the animal to suppress his cough. He refuses all food, and seldom attempts to lie down. The danger approaches so rapidly, that no delay should take place in administering relief.

In inflammations of the pleura which lines the chest, and is hence called the *Pleurisy*, both the symptoms and the treatment are nearly similar; only in the pleurisy the horse shews great uneasiness, is continually shifting about, and often strives to lie down, but immediately starts up again; whereas in inflammation of the lungs, the animal is more tranquil, and never attempts to lie down. 'In a pleurisy,' says Mr. Lawrence, 'a horse's mouth is generally parched and dry; but in peripneumony, or inflamed lungs, when opened, a ropy slime generally runs out in great abundance, besides a discharge from the nose much in the same way as in a malignant fever, and a red or yellow serum, or coagulable lymph, will adhere to the inside of the nostrils. In a pleurisy, a horse works violently at the flanks, is very restless, and his belly generally appears tucked up; but in the peripneumony, he always shews fulness, and the working of his flanks is regular, except after drinking, or when he is agitated by being disturbed by giving him medicine, in which case the heaving becomes stronger and more vehement than at other times; his ears and feet are for the most part always cold, and he often falls into damp sweats, with other symptoms common to malignant diseases, except that they come on more suddenly and with greater violence.'

An inflammatory attack is sometimes mistaken for the gripes: but the difference is very obvious; for when a horse is griped, he lies down and rolls about, his eyes are turned up, and his limbs stretched out as if dying; cold and clammy sweats suddenly appear; and he often stales and dungs, but with great pain and difficulty, until some relief be obtained.

Causes.—These diseases are generally produced by cold applied to the skin, by plunging a horse in cold water when in a sweat, too long or two violent exertion, or an exposure to a current of air in a state of perspiration. Indeed, inflammatory disorders are always produced by a sudden suppression of the perspiration.

Cure.—Immediately on ascertaining that a horse is attacked by an inflammation of the lungs or the pleura, take at least four quarts of blood at once; and if the animal be in high condition, or the difficulty of breathing continue, this quantity may properly be increased to six quarts. A clyster should next be administered, consisting of four ounces of Epsom salts dissolved in thin gruel. Repeat this every third hour until the bowels are well opened; then give the following ball, which must be repeated every twelve hours;

Emetic tartar, - - -	1 drachm.
Assafœtida, - - -	1 drachm.

With liquorice powder add syrup sufficient to make a ball. The horse should have bran mashes and water with the chill taken off, be warmly clothed if the weather be severe, and there should be a free circulation of air in the stable.

Mr. Gibson says, that 'as pleuretic disorders are more apt to leave some taint on the lungs than common colds or other inflammatory disorders, a great deal of care must be taken upon his recovery, that his feeding be proper and in right quantity, and his exercise well-timed. A horse should be kept to a light open diet for a fortnight or three weeks, viz. a quartern of bran scalded every day, and besides that two or three small feeds of the cleanest and sweetest oats sprinkled with water. Instead of the scalded bran, it will be well to give him sometimes, for a change, about a quart of barley scalded in a double infusion of hot water, that it may be softened, and the water may be given him to drink. His exercise should be gradual, and increased as he gathers strength, and always in an open free air when the weather is favourable. If there be any remains of a cough, the air, with moderate exercise, will tend greatly to remove it, and the remedies usually given in chronic affections of the chest should be resorted to. Purging is also proper after pleuritic diseases, but the purges should be very gentle. The following proportion will generally suffice:

Barbadoes aloes, -	6 drachms.
Castile soap, - -	half an ounce.
Ginger, - - -	half a drachm.

In a ball with syrup of buckthorn.

'This may be given with the usual preparations necessary in purging, and it will operate well without occasioning either sickness or griping.

'This ball may be repeated at the intervals of a week, provided the horse does not appear weak after the first dose.'

When the horse appears recovering and cheerful, and his appetite begins to return, the following drink is recommended:

Peruvian bark, - -	1 ounce.
Nitre, - - -	half an ounce.
Ginger, - - -	half an ounce.

Mixed and given in a pint of rue tea.

When the horse has not been bled and the disorder has been suffered to proceed, if a mortification does not take place, nature makes an effort to throw off the disease, and a quantity of mucus is discharged from the nostrils, and the legs and parts under the chest, arising from debility and an effusion of water in the chest, swell. Under these circumstances, bleeding is improper; but the following diuretic ball may be given with safety and advantage:

Assafœtida, - -	2 drachms.
Liquorice powder, -	half an ounce.
Venice turpentine, -	half an ounce.

Made into a ball. To be repeated in twenty-four hours.

The horse to have nourishing food, to be well rubbed, his nostrils frequently cleaned with a sponge and warm water, the rack and manger well cleaned, and the legs, after rubbing, bound round with hay-bands.

In violent attacks of inflammation on the lungs, some practitioners advise a large blister, composed of cantharides and sweet oil, to be rubbed on each side of the chest, or a rowel to be introduced in the breast; but these remedies are too slow of acting in desperate cases. Bleeding and clysters are therefore the best remedies in this common but dangerous disorder.

30. THE DISTEMPER.

Symptoms.—This is a kind of cold with which horses are affected in the spring. It is attended with some degree of fever, a sickness, and often a sore throat. Sometimes also it is attended by a cough and a discharge from the nose. But this epidemical disorder varies much in its symptoms, and is found to prevail mostly amongst young horses. Sometimes it is infectious and epidemical.

Causes.—This distemper is generally attributed to the effects of cold easterly winds upon animals who are confined in close hot stables, especially at the time they are shedding their winter-coats. Young horses are sometimes afflicted by it when shedding their teeth. It has, however, been ascribed by some writers to the peculiar state of the atmosphere.

Cure.—This disorder is seldom fatal when judiciously treated; but many valuable young horses have been destroyed by administering heating cordials, which is always hurtful in febrile cases. As soon as the symptoms of the distemper appear, the horse should be bled, the bowels opened by clysters, and, if the costiveness usually attending this complaint continues, a mild purge may be given. This with diluents, such as water-gruel or bran-water, which should be given plentifully, will be found sufficient to effect a cure. In cases where the throat appears swelled, a blister may be applied.

31. The Colic.

Symptoms.—This disease is indicated by the horse's alternately and suddenly lying down and rising; by his striking his belly with his hind feet; stamping with his fore feet; refusing his meat; and when the gripes are violent, by convulsive twitches, turning up his eyes, stretching out his limbs, and alternate sweats and cold damps; striving to stale; turning his head frequently towards his flanks; rolling about, and often turning on his back.

When the pulse becomes small and feeble, the horse frequently lies on his back, voids small portions of dung like gingerbread nuts, stands with his back-bone elevated, and his legs and ears become cold, it is pretty certainly indicated that an inflammation has taken place. When a mortification commences, the animal appears easier, which is a prelude to death.

Causes.—The colic is sometimes occasioned by drinking a large quantity of cold water when the body is heated by exercise; or it may be produced by bad hay, oats, or clover, or such as is new and prone to fermentation. It, no doubt often originates in weak and delicate animals, from the formation and confinement of air in the intestines,

Cure.—It is usual in this complaint to give gin, pepper, ginger, and other inflaming and irritating articles; and sometimes, when administered at the very commencement of a flatulent colic, they may afford instant relief; but these remedies are always extremely dangerous. On the other hand, clysters may in all cases of the colic be administered with great and certain advantage. And as this remedy is not attended either with much trouble to the operator, or disturbance to the animal, it ought to be repeated until the disorder be removed or much relieved. Previous to introducing the clyster-pipe, the hardened dung in the rectum should, as observed before, be drawn out with a small hand.

Mr. White recommends to give, as soon as the disorder is observed, the following draught:

Balsam of capivi, - -	1 ounce.
Oil of juniper, - -	2 drachms.
Spirit of nitrous ether, -	1 ounce.
Simple mint-water, -	1 pint.

To be mixed for one dose. Or the following:

Venice turpentine, one ounce, mixed with the yolk of an egg; adding, gradually, peppermint-water, one pint; also spirit of nitrous ether, half an ounce for one dose.

A clyster should also be injected, consisting of six quarts of water-gruel, or warm water, and eight ounces of common salt.

If the disease has continued for several hours, and the pain appears to be great, with a quick pulse, it will be proper to bleed to three quarts, for preventing inflammation, and removing the spasmodic contraction of the intestine. The draught and clyster ought also to be repeated, and the belly be rubbed for a considerable time with mustard embrocation. If the disease resist these remedies, which will seldom happen, give a pint of castor oil, with an ounce and a half of tincture of opium. Let the horse, at the same time, be rubbed perfectly dry by two persons, one on each side, and well clothed. The stall or box ought also to be filled with clean litter up to his belly.

The following draught is also recommended by Mr. White:

Oil of peppermint, -	20 drops.
Tincture of opium, -	half an ounce.
Gum arabic, - -	2 ounces.

The gum to be dissolved in a pint of warm water, and the whole mixed for one dose; the use of which should be accompanied with frequent small quantities of gruel, linseed tea, or any other mucilaginous fluid, and the injection of a clyster of the kind.

As this complaint is liable to occur on a journey, wrap the following up closely in a piece of bladder, to be used as occasion requires, viz.

Castile soap, - - -	3 drachms.
Camphor, - - -	2 drachms.
Ginger, - - -	1½ drachms.
Venice turpentine, -	6 drachms.

To be made in a ball for one dose.

To a horse afflicted by the gripes, give a clyster composed of—

Epsom salts, - - -	4 ounces.
Thin gruel, - - -	4 quarts.

Repeat this every half hour; and if the symptoms do not abate, the following ball may be given:

Assafœtida, - -	1 drachm.
Opium, - - -	half a drachm.

To be made into one ball with liquorice powder and syrup.

32. DIARRHŒA.

Symptoms.—This disease is not common; yet it sometimes occurs. It is indicated by a constant and immoderate discharge of dung, accompanied with pain, restlessness, and loss of appetite. As the disorder increases, the discharge is chiefly mucous, resembling jelly, or mixed with small hard lumps of dung, covered with a greasy matter. When the evacuation has become involuntary, and the extremities become cold, a fatal termination will generally ensue.

Causes.—This disorder may proceed from a defective perspiration, from too violent exertion, or from eating unwholesome food. It may also be occasioned from a morbid change in the secretions of the stomach and intestines. Sometimes it is the critical termination of a disease, in which case it is extremely useful, and ought not to be checked.

Cure.—Both astringents and violent purges are highly improper in this disease. Such medicines are best that invigorate the intestines. The following anodyne clyster, recommended by Mr. Clarke, may be used with advantage in cases where the purging is attended by griping pains, as it blunts the sharpness of the corroding humours.

Tincture of opium one ounce, or about two table spoonfuls, with an infusion of linseed one pint, or the jelly of common starch.

In ordinary cases, a drink may be given every morning, for two or three mornings, composed of—

Epsom salt, - - -	6 ounces.

Dissolved in two quarts of thick gruel.

The horse should be kept warm and easy: his diet should consist of bran-mashes, of oatmeal and bran, or malt; and his drink should be thin gruel. When the disease is nearly removed, he may be given a small cordial ball three or four times.

33. DISEASES OF THE KIDNIES.

Symptoms.—The kidney is subject to a variety of diseases and affections, which require the most particular attention.

1. *Inflammation of the kidney* is indicated by weakness of the back and loins, faintness, loss of appetite, dullness in the eyes, the urine is discharged in small quantities, and, as the inflammation increases, becomes bloody, and the voiding it more difficult; the extremities become cold, the pulse quick, and cold sweats frequently break out.

2. *A relaxation of the kidnies* sometimes occurs without any inflammation. This affection may be distinguished from the above by the urine being nearly of its natural colour whilst the horse remains at rest; but as soon as he is exercised, the discharge of the urine is accompanied with blood.

3. *Inflammation of the bladder* is attended by the same symptoms as an inflammation of the kidnies. The hind legs are extended wide, with a constant attempt to stale, and the urine is frequently mixed with mucus pus. Constrictions of the neck of the bladder may easily be perceived, by placing the hand between the anus and the scrotum, where the heat will be found great. If the hand be introduced into the rectum, and the bladder be found much distended, it must be instantly emptied, or it will

become paralytic, and in future incapable of contraction.

4. *Stone in the bladder* is sometimes formed. This affection may be ascertained by clearing the rectum of dung, introducing the hand, and pressing it downwards on the bladder, when the stone, if there is any, may be felt.

Causes.—The kidneys may be injured by an imprudent use of diuretics; or by overloading, drawing, or hard riding; and also by a fever. The bladder is often affected by a defective secretion of the mucous glands; and a constriction of the neck of the bladder generally arises from the animal being obliged to retain his urine whilst travelling.

Cure.—When it is perceived that the kidneys are inflamed take at least four quarts of blood, and give the following ball:

Barbadoes aloes, -	4 drachms.
Emetic tartar, - -	2 drachms.
Castile soap, - -	half an ounce.

And let the food consist of bran-mashes, or cut grass; and give a clyster every four hours. The loins should also be rubbed with the camphorated spirits of wine. Some recommend the following liniment:

Spirit of hartshorn, - -	2 ounces.
Tincture of opium, - -	1 ounce.
Spirit of turpentine, - -	1 ounce.
Oil of elder, - - -	2 ounces.
Linseed oil, - - -	2 ounces.

Put into a bottle, and shaken well together for use.

This liniment must be well rubbed on the parts affected, after they have been fomented with hot flannels, wrung out of an infusion of marshmallows; after which cover the part with a rag. When the disease is cured, if the season permits, the horse should be put to grass.

When blood is discharged from a weakness of kidneys, and there appears no sign of an inflammation, give four ounces of Epsom salts dissolved in gruel every four or five hours; or, if preferred, the following ball:

Emetic tartar, - -	2 drachms.
Venice turpentine, -	half an ounce.

Liquorice powder and syrup sufficient to make a ball. But in this case, relaxation from labour and a run at grass is the most effectual cure.

Inflammations of the bladder are extremely dangerous, and require copious bleeding, which must be repeated according to the strength of the animal. Large clysters of warm water should also be frequently administered; and the following will be a very useful drink:

Linseed bruised, -	half a pound.
Boiling water, - -	2 gallons.

To which add, after being cooled and strained,

Gum arabic, - -	4 ounces.

Which must be previously dissolved in a quart of boiling water. A quart of this mixture may be given every four hours.

When the pain and irritation appear considerable, give—

Opium powdered, -	1 drachm.
Linseed powder, -	half an ounce.

Gum arabic dissolved sufficient to make a ball.

This may be given every other day.

In constrictions of the bladder, many farriers recommend diuretics, such as nitre, turpentine, balsam of capivi, marshmallows, &c.; but these must evidently tend to increase the disorder when the bladder is distended. In this case also, clysters of warm water, and warm fomentations, with hot flannels applied just below the fundament, will be found both safe and useful. The fomentations ought to be persisted in for some time, and frequently renewed, and the bowels kept open with gentle purgatives. If these methods should fail in giving relief, an operation will be necessary, which is best performed by passing a staff up the urethra till it reaches the middle of the perineum, and making an incision upon it, through which a bougie or cathartic may be introduced, and the water drawn off; but this will be most safely performed by an experienced practitioner.

It is not usual to cut horses for the stone, nor has any efficient remedy been pointed out for this rare disorder.

34. The Strangles.

Symptoms.—This disease is indicated by a feverish heat, a painful cough, and a great thirst, with extreme difficulty of swallowing liquids, and a loss of appetite. The inflammation generally appears on the inside of the jaw-bone, though sometimes in the middle betwixt the jaws under the tongue-root. The latter is considered the most favourable situation for the tumour. Sometimes the parotid glands are affected, and swell up as high as the root of the ear; the animal breathes quick, and holds out his nose and head constantly in the same position; and his eyes appear as though they were fixed in his head. This is what is called the *vives* by old farriers. When this disorder discharges itself at the nose, it is called the bastard strangles, and, if neglected or improperly treated, occasionally end fatally, by affecting the lungs and inducing consumption.

Causes.—The cause of this disorder has never been ascertained. It has been compared to the small pox in the human race, as it generally affects colts and young horses, never returns again, and seems to throw off something obnoxious to the constitution, as the health is usually improved after its operation. This has induced some veterinary surgeons to inoculate colts with the strangles; but the practice has never become general.

Cure.—This disorder seldom proves fatal. If colts, while at grass, are attacked by the strangles, nature generally effects a cure; the abscess breaks of its own accord, and the cure is completed in a few days. When the colt is affected on being taken into the stable, or, as often occurs, while breaking, it may be proper, if the attack be violent, and the animal strong and full of flesh, to take about two quarts of blood, and to give the following purge:

Barbadoes aloes, -	3 drachms.
Castile soap, - -	4 drachms.
Ginger, - - -	half a drachm.

In one ball: but if the colt be above three years of age, another drachm of aloes may be added.

At the same time, the swelling should be fomented with a decoction of marshmallows, applied very warm, and a bran poultice should also be applied until the tumour breaks, when the matter should be carefully pressed out, and the orifice, which should be enlarged if too small, cleaned with a sponge and warm water.

Or the swelling may be dressed twice a day with the following liniment:

Elder ointment, - -	4 ounces.
Marshmallows ointment, -	4 ounces.
Water of ammonia, - -	2 ounces.
Spirit of turpentine, - -	2 ounces.
Camphorated spirit of wine,	4 ounces.

Mixed well together for use. After which, apply a poultice made as follows:

Fenugreek seeds powdered,	4 ounces.
Linseed powdered, - -	4 ounces.
Ale dregs, - - -	1 quart.

Boiled together, and thickened with rye flour: then add—

Hog's lard, - - -	2 ounces.

The whole to be applied as hot as the horse can well bear. When the swelling becomes soft, yielding, and pointed, open it with a lancet; and after pressing it gently, and cleaning it well, dress the orifice with the following digestive ointment:

Bees' wax, - - -	4 ounces.
Common turpentine, -	4 ounces.
Black pitch, - - -	2 ounces.
Rosin, - - - -	6 ounces.
Linseed oil, - - -	1 pint.

Melt the whole in an iron ladle over a slow fire; then add—

Spirit of turpentine - -	4 ounces.
Verdigrease powdered, -	2 ounces.

And stir them together till cold.

When this ointment is to be used, melt a small quantity, and dip a small tent of tow into it, with which dress the wound once a day. If the wound heals too fast, it may be kept open with a skewer dipt in butter of antimony; and if any lumps or hard kernals remain, a blistering ointment may be rubbed over the parts for two or three mornings.

When the discharge has ceased, and the abscess is healed, if the horse be not very weak and reduced, give the following purge:

Aloes Barbadoes, -	4 drachms.
Emetic tartar, - -	half a drachm.
Castile soap, - -	2 drachms.
Ginger, - - -	1 drachm.

With the usual precaution of bran-mashes and warm water.

35. SPLENTS.

Symptoms.—This disease commonly appears on the inside of the shank-bone; sometimes in the middle, and sometimes just below the knee. Frequently an enlargement of the bone takes place. It is sometimes situated under a ligament or tendon, and is generally attended by pain and inflammation. Before the excrescences appear that displace a tendon, the horse will be lame; but it requires some skill and experience to discover the exact part affected.

Cause.—The splent most generally attacks young horses, especially on the fore legs, and may arise from the legs receiving a violent concussion.

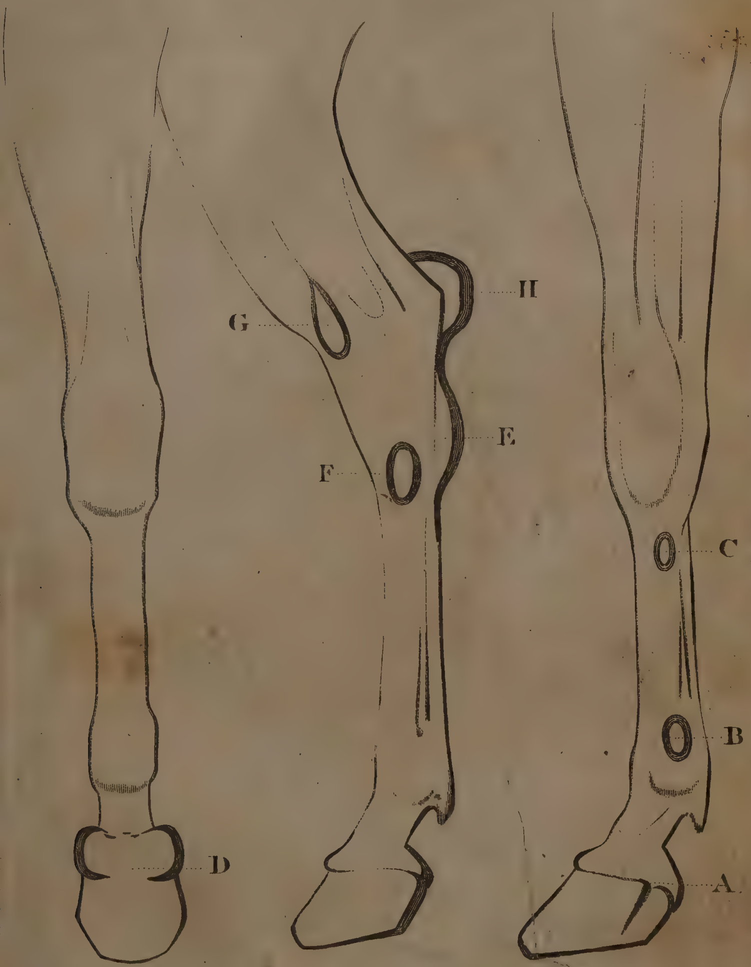
Cure.—In young colts splents sometimes disappear of their own accord; but this result should never be depended upon. The best remedy is blistering, which may be composed of—

Cantherides pulverised, -	half an ounce.

Mixed with sweet oil to the consistence of treacle.

Cut the hair very close off all around the leg, and rub in the blister with the hand for ten minutes; then tie the horse's head short to the rack, lest he blister his mouth and blemish his leg by biting it. A neck cradle will hinder the horse from reaching his hind-legs; but when the fore-legs are affected, it is sometimes necessary to keep him close tied for two or three days. Next day, dress the part with hog's lard, and walk the horse gently about. When the inflammation arising from the blister has subsided, bandage the part, and turn the horse into a straw-yard if in winter, or to grass if the season permit. Firing is also an effectual and approved cure for the splent.

DISEASES OF THE LEGS.



A	*Sandcrack*	E	*Curb*
B	*Windgall*	F	*Bone spavin*
C	*Splent*	G	*Blood spavin*
D	*Ringbone*	H	*Capp'd Hock*

36. The Ring-bone.

This is an enlargement of the lesser pastern bone, near the cornet of the hoof, and, in general, extends round the fore-part of the foot, in form of a ring; though it sometimes only appears on each side, a little above the cornet, and then is termed splinters of a ring-bone. The treatment is the same as in case of the splent, viz. blistering or firing.

37. The Bone-spavin.

This disease is usually situated on the upper end of the shank-bone of the hind-leg, either below or on the middle of the hock-joint. Cow-hocked horses are most subject to this affection, which, if not timely removed, may prove incurable. Before the union and enlargement of the small bones take place, the lameness will disappear for a short time after the horse has been exercised; and this is a sure sign by which to distinguish the bone-spavin from lameness in any other part of the limb, which generally increases from exercise. Many absurd and cruel remedies are often resorted to in this disease; but the safest and most effectual cure is the application of blisters, as before directed.

38. Stiff Joint.

This disease is generally occasioned by some wound in the joint, through which the *joint-oil* escapes, and causes great irritation and inflammation. This is followed by an enlargement of the bone heads, which at length unite in one mass, and the use of the joint is irrecoverably lost.

The best method of cure is to sear slightly the lips of the wound with a hot iron; or touch, every other day, the outside of the lips with a feather which has been dipped in the oil of antimony. Cover the wound with a pledget of fine tow, and carefully exclude the air. The adjacent parts may also be occasionally fomented with marshmallows boiled in water as warm as the hand can bear it.

39. STRAINS IN THE BACK SINEWS.

This generally occurs just above the fetlock joint. The inflammation ought to be removed by warm fomentations and bran poultices. After the inflammation has entirely subsided, apply the following lotion:

Crude sal-ammoniac,	1 ounce.
Vinegar,	1 pint.

Mixed in a bottle. Or the following may be used:

Camphor,	2 ounces.
Strong rectified spirits of wine,	1 pint.

Mixed together for use.

The part to be rubbed twice daily, and a bandage dipped in vinegar to be bound round the leg, and the horse to be kept easy. Should the above lotions prove ineffectual, the embrocation, consisting of cantharides and spirits of wine, recommended before, may be used with advantage.

The following astringent composition is much used in strains:

Camphor	2 drachms.
Dissolved in rec. spirits of wine,	half an ounce.
Nitre,	1 ounce.
Dissolved in wine vinegar,	half a pint.
Spirits of turpentine,	4 ounces.
White lead powdered,	half an ounce.
Aquafortis,	1 ounce.

Mixed and shaken well together in a bottle for use.

The *Thorough Pin*, *Blood-spavin*, *Curb*, and *Windgalls*, are small puffy swellings, which are, in general, easily cured by the blistering liniment, or firing.

40. The Coffin-joint.

In lameness of this part, the horse stands with his toe pointing forwards, which tends to ossify the ligaments which unite the coffin-bone with the lower pastern-bone, when the use of the joint is entirely lost. Blisters ought therefore to be repeatedly applied round the cornet until the disease be removed.

41. Lameness in the Hip-joint.

In this disease, the horse drags the leg after him on the toe. The application of the blistering liniment is the best remedy.

42. The String-halt,

Which is indicated by the horse suddenly catching up the hinder leg higher than is necessary while walking. This disease has always been considered as incurable.

43. Lameness in the Shoulder.

Lameness in this part is not very frequent. It is indicated by the horse dragging his toe, and moving his leg stiffly in a circle outwards at every step. A fomentation of bran and water, or camomile flowers, applied to the lower part of the chest, within the arm, will be found extremely useful; after which, use the following liniment:

Soft soap, - - - -	2 ounces.
Spirits of hartshorn, - -	4 ounces.

Stirred and combined well together; after which add,

Spirit of turpentine,	- -	4 ounces.
Oil of origanum,	- -	1 ounce.
Camphorated spirit of wine,		4 ounces.

Mixed and put into a bottle for use.

44. THE GREASE.

Symptoms.—The approach of this disease is indicated by the horse raising his foot frequently from the ground, and evincing great pain and uneasiness when resting upon it. Swelling and inflammation of the heel about the fetlock follows, and which secretes an oily matter of a peculiar offensive smell. When the inflammation extends to the cellular membrane under the skin, the pain and lameness become very severe. The affected part is soon brought to an abscess, which bursts and leaves a deep ill-looking ulcer. This disease most commonly attacks the hinder legs, and is sometimes so painful as to prevent the horse from lying down, which also tends to increase the swelling.

Causes.—Heavy horses with round fleshy legs are most subject to this disorder. This disease is occasioned by sudden changes from a cold to a hot temperature, such as the removing of horses from grass to hot stables; from the too sudden change from a generous to an impoverishing diet; from neglect on the part of the grooms in leaving the heels wet and full of sand; and from constitutional debility. It generally attacks horses in the spring and autumn, and may, in most cases, be attributed to the want of cleanliness and proper exercise.

Cure.—A slight affection of the grease may, in general, be removed by a poultice of boiled bran and linseed powder, constantly applied and kept moist with warm water; giving occasionally a mild diuretic. When the inflammation seems abated, apply the following astringent lotion:

Alum powdered,	1 ounce.
Vitriolic acid,	1 drachm.
Water,	1 pint.

Or—

Sugar of lead,	4 ounces.
Vinegar,	6 ounces.
Water,	1 quart.

Mixed for use. Others prefer—

Golard's extract,	1 drachm.
White vitriol,	1 drachm.
Water,	1 quart.

Mixed.

If the disease is of long standing, or if the horse has had it before, it will be proper to administer a mild purge; but if the horse be weak, the following:

Soccotrine aloes,	1 ounce.
Castile soap,	1½ ounce.
Powdered ginger,	half an ounce.
Myrrh,	half an ounce.

Form these into a mass with syrup, and divide it into six balls. This medicine will open the bowels, improve the strength, and promote absorption.

In very obstinate cases of grease, Mr. White has seen the mercurial alterative of service, giving one ball every morning. It is formed thus:

Calomel,	half a drachm.
Aloes,	1 drachm.
Castile soap,	2 drachms.
Oil of juniper,	30 drops.

Made into a ball with syrup for one dose.

Apply also poultices of linseed meal, warm water, and yeast, which soon removes the offensive smell. When the heel does not seem disposed to heal, the astringent ointment mentioned above should be changed for the following:

Yellow resin, - - -	4 ounces.
Olive oil, - - -	half an ounce.
Red nitrated quicksilver in fine powder, - -	half an ounce.

In all cases of grease, exercise on clean and dry ground is of the highest consequence; and if he be weak, a liberal allowance of corn, with careful grooming, is of great service. When the disease is subdued, a run at grass is highly proper. For preventing a return, cleanliness and frequent hard rubbing is essentially necessary; and a horse whose legs are disposed to swell should be bandaged after hard work, and the bandage moistened with alum and water.

‘It is a general, but a very erroneous opinion,’ says Mr. Lawrence, that the hair harbours dirt, and consequently promotes the disorder. But the contrary is the fact. From the hair being longer at the heels than in any other part of the leg, it is clear that nature had some particular reason for that difference; and that reason is, on a moment’s consideration, self-obvious: namely, for the defence of a part which is more exposed to friction than the rest of the limb. This hair, by lying close to the skin, shields it from the action of the dirt, which, when the heels are trimmed close, always insinuates itself, and by rubbing the skin irritates it and inflames it to a considerable degree; for when the hair is cut close, that which is left does not lie smooth, but stands out endways like a brush, and thus easily admits mud, and clay, and every other kind of dirt. The skin secretes a natural oily fluid, for the purpose of keeping it soft and flexible; but when it is thus exposed by trimming off the hair, this fluid is rubbed off by friction, and the skin becoming hard and dry, soon cracks, and the grease ensues.

'That this hair is a protection to the heels may be easily ascertained by laying it aside and examining the surface of the skin, which in that case will be found clean and dry, even after travelling the whole of the day through the dirtiest roads. The thorough-bred horse it is true has but little hair on his heels; but it should be remembered, that he is originally a native of a hot climate, where the soil is light and sandy, and free from moisture.

'Horse-dealers know so well the utility of leaving the hair on the heels of horses that work hard, that they never trim their own hacknies which they ride to fairs; and coach-masters and inn-keepers would find it beneficial to adopt the same plan.'

If *cracks* appear in the heels without the general swelling and discharge of matter, apply the following ointment:

Hog's lard, - - -	4 ounces.
Palm oil, - - - -	2 ounces.
Fine olive oil, - - -	1 ounce.

Melted by placing the pot which contains it in boiling water, and then stirring in—

Acetated litharge, - -	1½ ounce.

Stir the mixture till nearly cold.

If the *crack* appears painful and inflamed, apply soft poultices, made of turnips or oatmeal and beer grounds, mixed with goulard, for two or three days, and then the following ointment:

Fresh hog's lard, - -	4 ounces.
White lead powdered, -	1 ounce.

Mixed, and spread upon tow, which may be secured by a light thin bandage.

45. Sand-cracks.

Symptoms.—This disease is a partial division of the wall of the hoof, commencing at the cornet, and extending half way down the wall. When permitted to increase, it generally terminates in an ulcer, which if not prevented, will ultimately destroy the cartilages and bones of the foot. When the ulcer, or *quittor* deforms the hoof, so as to render one part higher than the other, it is called a *False Quarter*. When a running fluid escapes through the cleft of the frogs and heels, the disease is called a *Running Thrush*. An old, neglected, and inveterate sand-crack, which penetrates between the horny and fleshy soles of the foot, is termed a *Canker*.

Causes.—This disease may arise from a variety of causes, particularly from bad shoeing, treads, overreaches, wet pastures, or a faulty conformation of the foot.

Cure.—Cut away, down to the quick, that part of the hoof that is cracked, and dress it with a pledget of tow dipped in tar, which secure by a piece of tape; and if the crack reaches to the bottom of the foot, a bar-shoe may be useful, in preventing the quarter from springing. A blister round the cornet will also be serviceable.

A *quittor* can only be cured by cleaning the ulcer thoroughly. Mr. Lawrence recommends a tent to be introduced in the following manner;—Take a small piece of thin India paper, spread some butter or lard over it, then sprinkle about ten grains of corrosive sublimate, finely powdered, over the surface of the paper, and roll it up into as thin a roll as possible, and introduce it into the quittor as far as it will go. The horse's head should then be tied up for a few hours, to prevent him from rubbing it with his mouth, and the tent should be left within the ulcer for three or four days, at the expiration of which time it may be taken out, and the diseased part will follow it; after which it becomes a simple wound, and requires nothing more than to be kept clean, and defended from the air by a bandage round it.'

A *running thrush* in the frog is often a troublesome disease. All the ragged and diseased parts should be cleared away, and afterwards well washed with soft soap and warm water. It may be dressed with spirits of turpentine dissolved in water; or the following digestive mixture:

Egyptiacum,	2 ounces.
Spirit of turpentine,	1½ ounces.
Tincture of benzoin,	half an ounce.

Mixed.

A *canker* must be also very carefully cleaned and dressed with butter of antimony, upon which should be laid a pledget of dry tow, covered with powdered lime; and this should be renewed daily until the part appears red and healthy, when it may be dressed by the following digestive ointment:

Turpentine,	1½ ounce.
Bees' wax,	1½ ounce.
Yellow resin,	3 ounces.
Black pitch,	half an ounce.
Linseed oil,	half a pint.

Dissolved together; then add—

Spirits of turpentine,	2 ounces.

When used, a part may be warmed, and a pledget of tow dipped into it. If the new flesh should grow too rapidly and wildly, the following caustic oil ought to be used:

Oil of vitriol,	half an ounce.
Spirits of turpentine,	1 ounce.

Mixed gradually till well united.

During this treatment, the horse's bowels to be kept open by gentle purges. He must be kept clean, and occasionally have bran-mashes.

46. CONTRACTION OF THE FOOT.

Symptoms.—This is a very common disease, and generally affects the heels. The contraction comes on gradually. It is frequently attended with corns of a soft and red appearance, which render the foot very tender and painful.

Causes.—Some horses have a tendency to this disease from the thickness and strength of the wall of the hoof. It may also proceed from some previous disorder in the internal parts of the foot, from the pavement of the stall sloping too much, or from bad shoeing, or the want of sufficient moisture in the horn.

Cure.—Many barbarous, foolish, and dangerous remedies are recommended for this troublesome disorder. The best and safest way to stop the progress of contraction in the hoof, is to turn the horse into the straw-yards perfectly barefoot, or rather, when possible, out into a soft and moist pasture. Previous to this, cut off the hair close round the cornet, and apply a mild blister, composed of two drams of cantharides powdered, with sweet oil sufficient to make it the consistence of treacle. During the first day, the horse's head must be tied up; after which, the part may be dressed every third day with hog's lard. Currying and clothing in the mean time to be gradually left off, preparatory to his being turned out.

Before he is turned out, it will likewise be necessary to pare the hoof as thin as possible, especially at the heels, and to shorten the toe and rasp the quarters.

The *pumied sole* is a disease just the reverse of the above, and is often produced by an inflammation of the foot. The treatment ought to be exactly similar to the preceding case; only the quarter should not be rasped down, while the toe should be cut as short as possible. In either case, a complete cure must not be expected, unless the horse remains at grass until the disease be removed.

47. Fistula in the Withers.

Symptoms.—This troublesome disorder generally commences at the top of the withers. It is small at first, but soon enlarges and spreads on one or both sides. When suppuration takes place, a sanious discharge is conveyed in small channels or pipes through the cellular membrane.

Causes.—This disorder frequently proceeds from bruises occasioned by the collar or saddle. Injuries of the bone, or whatever produces inflammation, produces the fistula. If it arises from a bad habit of body, the cure is very hopeless.

Cure.—As fistulas, if improperly treated, become very obstinate ulcers, it is always best to call in the assistance of a skilful practitioner. His first object will be to ascertain the direction of the fistula or pipes; and for this purpose, if there be no danger of wounding any of the large blood-vessels, he will lay it thoroughly open. The next object is to restore the surface of the diseased part to a healthy state by caustic applications. The following is recommended:

Corrosive sublimate, - 1 drachm.
Dissolved in 2 ounces of spirit of wine.

A pledget of tow dipped in this lotion to be applied to the part, and in three or four days a slough or core will come away. If the surface appears healthy, nothing more is necessary than to keep it clean; and if the granulations grow too luxuriantly, sprinkle over the surface of the wound a small quantity of verdigrease.

48. WENS.

Symptoms.—Wens are usually a small, spongy, fleshy substance, contained in a bag, and grow out of various parts of the body. They are seldom painful, grow very slowly, and, though a deformity, very seldom causes lameness. Swellings which appear on the cap of the hock, and also on the point of the elbow, are generally classed amongst wens.

Causes.—These tumours generally arise from accidents; but when they appear on both heels or elbows, they seem to be a spontaneous production.

Cure.—When wens are produced by blows and contusions, it will in general be sufficient to wash the part frequently with vinegar and water; but when they are likely to suppurate, warm and softening fomentations are proper. Should the thickness of the skin seem to retard their breaking, and they appear full of matter, it will be necessary to open them on one side with a lancet, after which apply some digestive ointment.

Mr. Gibson, in treating of wens, says, 'I was once concerned in the case of a very fine horse that had a large wen on the lower part of his neck, near the windpipe, which was cut off with a sharp instrument. It grew from a small beginning, not bigger than a walnut, to the bulk of a middle-sized melon, without pain or inflammation; but at last it became troublesome, and affected the motion of his shoulders. This substance, when it was cut off, appeared to be no other than a mass of fungous flesh, a little variegated in its colour, and probably proceeded from a rupture of some very small twigs of the jugular arteries, which, being enlarged by a continual afflux of the blood, caused so great an effusion of blood from several orifices, that it was with difficulty stopped by the application of the actual cautery. When wens are pendulous (he observes) and hang by a small root, the best way to extirpate them is by tying them with a waxed packthread, or a hair line, making the ligature tighter by degrees till the substance falls off; afterwards it may be healed with common digestive ointment, or bathing it frequently with spirit of wine or tincture of myrrh.

'But, when a wen is broad on its root or place of attachment, and has several origins, like cords or strings, it is then the safest way not to meddle with it. If the cure be practicable, it must be done by excision or caustic. The first dressing must be with dry tow, and afterwards with the common digestive. If much fungous flesh arise, it may be dressed with red precipitate; and where most required, the sore may be strewed with precipitate and burnt alum in powder, of each equal quantities mixed. If yet stronger escharotics be required, equal quantities of powder, of blue vitriol, and of red precipitate may be used; or the part may be touched with a feather or pencil dipped in butter of antimony.'

48. THE POLL-EVIL.

Symptoms.—This disease is very similar to a fistula in the withers. It is an inflammation and consequent suppuration between the poll-bone and the first vertebra of the neck. The ulcer is sometimes very obstinate; and when it extends beyond the skin, the matter sometimes insinuates itself below the ligament of the neck, usually called '*taxy waxy*;' and it not unfrequently produces a caries or rottenness of the vertebræ.

Causes.—This disease generally proceeds either from a blow or hurt on the head, by a horse's hanging back in his collar, by striking his head against the rack or manger, and is frequently produced by a blow given on the head by brutal coachmen or carters. Sometimes it is caused by a shy horse jerking up his head against the top of the stable door. When it proceeds from a peculiar habit of body, the cure becomes extremely difficult.

Cure.—When an inflammation is perceived to have begun in this part of the neck, it ought to be stopped immediately by the application of a blister; after which apply a solution of sal-ammoniac in vinegar, by means of a cloth kept constantly wet.

When the skin appears dry, rub the affected part two or three times a day with the following embrocation:

Camphor, - - -	1 drachm.
Spirits of wine, - -	half a pint.
Golard's extract, - -	half a drachm.

Mixed. In the mean time the cure will be facilitated by administering a gentle purge.

If a suppuration appears inevitable, it must be encouraged by the frequent application of warm poultices, or fomentations of bran and water; and when the swelling seems sufficiently ripe, which may be known by pressing the part with the finger, it must be opened by the introduction of a seton, which may be effected thus; Introduce a needle with a proper cord at the highest part of the tumour, and bring it out at its lowest part, so that the matter may more easily drain off. The cord must be previously wet with the following mixture;

Corrosive sublimate, -	half a drachm.
Spirits of wine, - -	2 ounces.

and when drawn through, cut from the eye of the needle, and fastened together at both ends. Great care, however, must be taken to avoid the nerves and blood-vessels in introducing the needle; to prevent which, it is a good plan to make a small opening with a lancet, and through it to introduce a sheath, as the needle may with great safety be passed through it. The seton should be drawn through a little and wetted with the mixture every day

When the discharge becomes thick and white, and the abscess falls level, the seton may be removed, and the part washed twice a day with warm water. During the whole of this process, the affected part should be carefully excluded from the air.

After the wound is thoroughly cleaned, some of the old farriers recommend it to be dressed with the following styptic mixture:

Oil of vitriol,	1 ounce.
Spirit of salt,	half an ounce.
Sublimate powdered	2 drachms.

Mixed in a bottle.

After the wound is dressed with this mixture, by dipping two or three tents of tow in it, and inserting them in the wound with a probe, they recommend the following scalding mixture. It is certainly a strong, and perhaps a cruel medicine; but it will, no doubt, operate in destroying the diseased surface.

Scalding mixture:

Mutton suet,	4 ounces.
Rosin,	4 ounces.
Tar,	4 ounces.
Bees' wax,	2 ounces.

Melt them together; then add—

Verdigrease powdered,	1½ ounce.
Spirit of turpentine,	4 ounces.

Mix the whole together for use.

This mixture is made scalding hot, and poured into the wound. The lips of the wound are then closed with two or three stitches, and bound up. In nine or ten days, the dressing is removed, the wound washed with warm water, and the scalding is repeated; and after an equal lapse of time, the operation is again performed. The running will then continue for some time, when the wound will heal.

If the wound gets foul and callous about the edges, dress it with the following cleansing ointment:

Yellow basilicon,	-	4 ounces.
Oil of turpentine,	-	1 ounce.
Red precipitate powder,		half an ounce.

Mixed.

This is a better and safer application to wounds than powerful caustics.

If the suppuration has proceeded any length before it is discovered, there will probably be a number of sinuses or pipes, with matter lodged in each. When it can be easily effected, it is proper to lay these open; and make them communicate with each other; or if their direction can be ascertained, a seton may be passed through each.

When it is necessary to use the knife, the greatest care should be taken not to wound the ligament, or, as it is usually called, the *fix-fax* of the neck. The best method of avoiding it is to have the animal's head fastened very high to the rack, by which the ligament will be more slack, and the finger can be easily introduced below it, so as to be a guide to the knife. If this tendon is cut, the horse's head falls down, and he is rendered entirely useless. When this disease is suffered to remain for a length of time, it generally leaves a stiffness in the upper part of the neck, which decreases the value of the horse.

50. RUPTURE.

This dangerous disease generally proceeds from violent exertion, kicks on the belly, and high and difficult leaps, especially when heavy laden. Gibson says he has known it produced by too deep an incision being made in inserting a rowel. It usually happens at the navel, or through the rings at the back part of the belly into the scrotum.

This disease, except in very slight cases, is incurable; and all that can be done is to palliate and render the animal as comfortable as possible. When not too large, the tumour will return on being pressed. If the case be recent, bleed, and give emollient and oily clysters, boiled barley, and malt mashes, and foment the part twice a day with camphorated spirits and warm vinegar. Poultices, composed of oatmeal, oil, and vinegar, will also be found useful.

51. Falling of the Fundament.

This complaint is usually found in horses of a weak and delicate constitution, but is sometimes the effect of a long-continued looseness, of docking, or of hard riding or driving.

This disorder, if timely noticed, may be easily cured. The gut should be returned as soon as possible, by pushing it up with the ends of two or three fingers wrapped round with a piece of soft linen rag, gently greased. Before returning the gut, wash it with a solution of alum, or white vitriol, and port wine and water; and a little of either of these should be frequently injected. If the gut appears inflamed, it must be anointed with the following cooling liniment:

Marshmallows ointment,	-	1 pound.
Sugar of lead, - -	-	1 ounce.

Mixed well together.

The animal's bowels to be kept open with gentle purges and bran-mashes.

Sometimes the disease is so obstinate, that it becomes necessary to cut off, with a surgeon's knife or a red-hot cautery, the protruded gut. The wound commonly heals soon; but the horse, after this operation, should have a run at grass, or be turned out for some time into a straw-yard.

52. FALLING OF THE PENIS.

This disease consists in a relaxation and total weakness in the muscles or ligaments destined to sustain and support it in its natural state. It is most common in hard-wrought draught horses, or in stallions who have covered too many mares in one season.

In slight cases, return the penis within the sheath, and then throw a pail or two of cold water, or of salt and water over it several times in a day. Let the muscles also be anointed with the following liniment:

Hog's lard, - - -	4 ounces.
Oil of turpentine, - -	1 ounce.

Melted together over a slow fire.

When the complaint continues obstinate, the penis must be bolstered up, and a charge applied over the back part of the sheath, so as to leave the horse sufficient room to make water. If the complaint is attended with general weakness, tonics and cordial remedies must be applied.

53. DISORDERS OF THE EYES.

Symptoms.—Before we enter into this important subject, it will be proper to remark, that in the eye of the horse there is a firm cartilaginous substance, situated at the inner corner of the eye, the greater part of which is hidden by the eye-lids; but a small portion projects beyond them, and may be distinguished by its black colour. This is commonly called the *haw*, and by anatomists the *membrana nictitans*, and is supposed to be a production of the retractor muscle. Our reason for mentioning this part will appear immediately.

Inflammation of the eye sometimes makes its appearance very suddenly; at others it is gradual in its attack. In general, one of the earliest symptoms of it is a swelling of the eyelids, especially of the upper, which is with difficulty held open; the eyes water considerably, and drops of tears may be seen at the extremity of the lachrymal duct, which do not appear in the healthy state of the eye. The external transparent parts of the eye becomes discoloured and obscured, appearing of a blackish glassy hue; sometimes of a dull white, at others brown or bluish. Red vessels may be seen running over the white of the eye, especially at the corners, and sometimes reaching to the centre of the eye. The cornea is said to be most obscured on its upper part; but this is probably owing to the situation of the person who looks at the eye, who being below it, sees directly through the lower part of the cornea, and but obliquely through the upper. When the eyes are in this state, the horse is very impatient of light, and holds his head down to guard against it. The eyelids and ball of the eye are evidently much hotter than usual; and sometimes there may be seen through the cornea, a small quantity of thickish matter like pus, in the lower part of the anterior chamber of the eye. The cartilaginous membrane, or *haw*, is now much more visible, and projects forward considerably outward from the corner of the eye.

It not unfrequently happens when the disease has not proceeded farther than we have described, that it gradually, sometimes pretty suddenly, disappears, and is seen again in the course of a few weeks, although sometimes it comes back in the course of a few days. The disappearance of inflammation in the eye of the horse is sometimes so sudden, that the eye, which one day is considerably inflamed, will appear the next perfectly clear and healthy. Sometimes it seems to appear and disappear periodically; and it has been supposed, by ignorant people, that at these periods it follows the changes of the moon, whence it has received the name of *lunatic or moon blindness.* If the disease does not thus disappear, or if it appears again, and reaches the height before described, the inflammation goes on, and the cornea becomes more obscure; or, what very frequently happens, the cornea recovers the transparency, and the christalline humour becomes opaque.

In the horse one eye frequently only is affected: whereas in man both eyes are generally inflamed at the same time. This disease usually occurs in young horses of five or six years old, than in those of a more advanced period. It is said that horses are never affected with inflammation of the eyes till they are broken, or taken up from the pasture where they have remained from their birth.

Causes.—A plethoric state of the body seem very much to predispose to inflammation of the eye, and this seems to account for its occurring so frequently in horses of five or six years old, as at that age they generally cease to grow, and are, of course, more disposed than at other times to fulness of blood. Sudden changes of temperature form a very common exciting cause of this disease, and the heat and foul air of a close stable frequently produce it. Such horses as are kept in dark stables are also more subject to it, from the effect of sudden exposure to broad daylight. Want of exercise, or extremes of idleness and hard work, may also assist in producing it. Mr. Coleman considers this disease in the horse as an inflammation of a specific nature, very different from any that occurs in other animals. The principal reason for supposing that the constitution is affected is, that a horse affected with an inflammation of the eye either does not perspire, or sweats profusely, indicating a slow fever.

Cure.—In the early stage of this disease, bleeding is very necessary; but if the horse is not very fat and gross, this need not be repeated. It will be proper also to apply a blister or two to the head, as near the eye as possible, and the veins at the corners of the eye should be opened, to draw blood from that part. The horse must be put on low diet, and should have only very moderate exercise; the stable should be kept well aired and cool; and if the horse's eyes are very sensible, and the stable happen to have windows these should be darkened. It will generally be adviseable to give a purgative medicine; and the horse may drink frequently of some cooling liquor, especially of water, with nitre dissolved in it. Rowels have been sometimes recommended; and it is said that considerable benefit has followed the insertion of setons as near the eye as possible.

If the skin, as is generally the case in this complaint, be dry, the following drench will be useful;

Nitre, - - - -	1 ounce.
Emetic tartar, - - -	2 drachms.

Dissolved in water-gruel.

Wash the eye with the following stimulating solution;

White vitriol, - - -	1 drachm.
Sugar of lead, - - -	1 drachm.
Soft water, - - -	half a pint.

Mix these, and bathe the eye two or three times a day. This is a better application than stronger stimulants, which frequently do much harm.

Gibson recommends the following lotion:

Rose-buds, - - -	2 drachms.

Infused in half a pint of boiling water; when cold, pour off the infusion and add—

Sugar of lead, - - -	20 grains.

Lawrence says, 'the following embrocation has been found efficacious in inflammatory attacks on the eye:

Vinegar, - - -	half a pint.
Crude sal ammoniac, -	1 drachm.
Water, - - - - -	3 half pints.

'Mixed. Bathe with the above mixture three or four times a day.

'In addition to the above, the following embrocation will in general be found useful;

Spirits of wine, - -	half a pint.
Laudanum, - -	1 drachm.
Golard's extract, - -	half a drachm.
Spring water, - -	1½ pint.

'To be mixed together in a quart bottle. The above may be used three or four times daily.'

Horses that are peculiarly subject to disorders in the eyes are called buck-eyed, that is, their eyes are small and the eyelid deeply wrinkled. Exercise and wholesome feeding are the best preventatives of blindness in such animals. When the crystalline lens is suddenly affected, bleeding, blistering, and the medicines before recommended, must be used; and if the whiteness is not soon removed, blindness will ensue. A cataract cannot be removed in a horse, as in a human being, by an operation.

54. Swelling of the Breast.

Symptoms.—This disease is indicated by the breast swelling, and the neck becoming stiff and incapable of bending. The horse also droops his head, refuses his food, trembles, and faulters whilst walking. Sometimes the swelling extends towards the throat, and threatens suffocation. If the swelling yields to the finger, and the impression remains, it is a sign that it is dropsical.

Causes.—This disorder may proceed from hard riding, giving a horse cold water to drink when hot, a stoppage of the perspiration, or from foul feeding without sufficient exercise.

Cure.—The cure must commence with copious bleeding and the administration of clysters. The common purge, composed of—

Barbadoes aloes,	- -	8 drachms.
Castile soap,	- - -	2 drachms.
Ginger,	- - - -	1 drachm.

In a ball, should also be given, with bran-mashes and warm water.

When the purge has ceased to operate, give the following every two days:

Emetic tartar,	- -	2 drachms.
Venice turpentine,	-	half an ounce.
Liquorice powder mixed in a ball.		

The swelling should also be fomented every two hours with bran and hot water. If the swelling appear dropsical, the matter may be let out by striking a fleam into four or five places where the swelling hangs most, and encouraging the discharge by warm fomentations. If, however, the inflammation has been so acute as to form matter, the abscess may be opened with a lancet, and the wound treated as directed in Fistula of the Withers.

55. THE JAUNDICE.

Symptoms—This disease is generally known by the term, 'The yellows.' It is indicated by the eyes appearing of a dusky yellow colour; the mouth, lips, and saliva, acquire a yellowish cast; the animal is dull and sluggish, and refuses his food; his urine is of a dark brownish colour, and when lodged on the ground appears red; he is also very costive, and his dung is very hard, and has the appearance of a yellowish, or greenish clay; his pulse is irregular, attended with fever in a greater or less degree. The disease and fever increasing, if not speedily removed, terminates in death.

A modern writer says that, 'the signs of the jaundice in horses are, a dusky yellowness of the eye, the inside of the mouth, and lips; the tongue and bars of the roof of the mouth also look yellow. But it is necessary to distinguish between the yellowness of the jaundice, and that yellowness of the mouth and eyes, which sometimes happens on the crisis of an inflammatory fever, where the inflamed parts look yellow when the fever and inflammation are going off.

'When this happens after a fever, the horse generally recovers his appetite, and looks lively, and the fever leaves him, and the yellowness soon after wears off.

'But in the jaundice, the yellowness is one of the first symptoms, and generally appears in the beginning of the complaint. The horse is dull, and refuses all manner of food, and the fever begins slowly; yet both that and the yellowness soon increases, and proceed together. In the decline of an inflammatory fever, a horse dungs and stales freely. In the jaundice, the dung is generally hard and dry, and of a pale colour, nearly white. The urine is commonly of a dark dirty brown colour, and when it has settled some time on the pavement, it looks red like blood. He also stales with some pain and difficulty; and if the disease be not soon checked, all the symptoms will increase very rapidly.'

Causes.—This disease generally proceeds from some affection of the liver. Sometimes it is occasioned by high feeding, costiveness, or a suppression of the perspiration from cold. In young horses, the disorder is seldom dangerous; but in old horses, a complete cure is seldom effected, as in such cases it usually proceeds from a diseased state of the liver.

Cure.—Experienced veterinary surgeons differ in their opinions of the proper mode of cure in this disease. Some advise bleeding in the first stage of the disorder, if it be accompanied by fever; and

Gibson says, even if the jaundice be confirmed, it will be proper to bleed, and afterwards to give some laxative clyster; for in the beginning of the disease, horses are apt to be costive, and sometimes costiveness alone will bring it on. The clyster may be made of decoctions of marshmallows, camomile-flowers, or fennel-seeds, with some linseed oil. A decoction of madder and turmeric, with the addition of soap, may also be useful in a clyster. If the inflammation increases, which may be ascertained by the quickness and hardness of the pulse, more blood may be taken, and a pint of castor oil, or six ounces of Epsom salts, may be given at intervals of twelve hours.

If the bleeding and medicine have the desired effect of reducing the inflammation, the horse generally grows settled and quiet, and begins to feed.

In three or four days the disease generally abates, and the horse recovers his appetite in some degree. The disappearance of the disease may be ascertained by his eyes beginning to look clear, and the inside of his mouth of a lively colour; but if, on the contrary, there should be a discharge from his eyes, with a swelling of the eye-lids, which often occurs when the disease is near its crisis, it is evident that more time must elapse before the animal can be said to be perfectly cured. As the bowels are generally costive in this stage of the disease, the following opening ball may be given:

Emetic tartar, - -	1 drachm.
Aloes Barbadoes, -	5 drachms.
Castile soap, - -	2 drachms.
Ginger, - - -	half a drachm.

In one ball.

56. Coughs.

Symptoms.—This disease usually commences by a general dullness and heaviness, a dryness and increased redness of the inside of the nostrils, from which there soon proceeds an unusual secretion of mucus; a dryness of the eyes, or sometimes an increased effusion of tears. In a short time there is generally added some degree of cough and difficulty of breathing; and sometimes there is with these symptoms a considerable degree of heat and dryness of the skin; increased thirst, and not unfrequently a loss of appetite. At first the cough is dry, and sometimes continues so; but more frequently, when the complaint has remained for some time, a frothy whitish mucus is coughed up. The pulse is not always much affected in this disease; but in general it is fuller and harder than natural. The first symptom of the disease is not unfrequently a chilliness and trembling.

When a cough has existed for a considerable length of time, and the horse shews no other particular symptoms of disease, it is called a *chronic cough,* which frequently terminates in broken-wind. In this kind of cough the lungs is generally affected, the horse breathes quick, yet his nostrils are not much distended. The cough is short and husky, the animal frequently sneezes, and discharges phlegm through his nostrils.

When a horse has a cough, and he appears hidebound, his legs swell in the morning, and his appetite fails, it is clear that the disease arises from a bad habit of body.

Causes.—The principal causes of cough are, sudden changes of temperature, especially cold applied when the body is in a state of perspiration, or entering a warm stable after being long exposed to a cold air. It may also proceed from greasy or farcy humours lodging in the body; or it may be occasioned by any internal irritation.

Cure.—If the complaint is slight, and there is little fever, it will often be sufficient to take the animal within doors into a warm stable, give him a warm mash, and put a cloth over him, when he will perspire through the night, and be nearly well next morning. This plan will also answer, if it be adopted immediately on perceiving the chilliness or shivering.

If the horse, in consequence of coughing, discharges mucus or phlegm through the nostrils, this discharge should be encouraged by the following ball, which should be given every other night for four or five times:

Assafœtida,	-	-	-	2 drachms.
Liquorice powdered,			-	2 drachms.
Venice turpentine,		-	-	2 drachms.
Sulphur,	-	-	-	1 drachm.

Mixed in a ball.

The horse to have bran mashes or carrots, to be gently exercised, and kept moderately warm. The following cordial ball may be given occasionally in the interval between the other balls:

Aniseeds bruised,			-	-	4 ounces.
Spanish liquorice,			-	-	4 ounces.
Liquorice powder,			-	-	4 ounces.
Carraway seed,			-	-	2 ounces.
Aniseed balsam of sulphur,					2 ounces.
Ginger,	-	-	-	-	4 drachms.
Oil of aniseeds,			-	-	4 drachms.

With honey sufficient to make it of a proper consistence; to be divided into 12 balls.

Or the following cordial drink:

Aniseeds,	-	-	-	1 ounce.
Carraway seeds,		-	-	1 ounce.
Grains of paradise,			-	1 ounce.
Aromatic confection,			-	half an ounce.
Balsam of sulphur,			-	2 ounces.

Beat up the balsam with the yoke of an egg; then mix the powders, and give the whole in a pint of warm gruel and two table spoonfuls of sugar. Repeat it once a day, for every other day, three or four times.

If the cough be accompanied by a considerable degree of fever, and the horses pulse is hard, it will be proper to draw blood, according to the urgency of the symptoms, before giving any internal remedy, or using warm clothing. After bleeding, a drench composed of warm ale, with a drachm or two of salt of hartshorn, or half an ounce of spirits of hartshorn sweetened with molasses, will prove an excellent remedy; after taking which, the animal should be well rubbed down, and clothed as before. If he is costive, back-raking, followed by clysters, will be advisable; and throughout the treatment costiveness must be avoided.

In order to decrease the fever, give the following drench:

Nitre, - - - -	1 ounce.
Emetic tartar, - - -	2 drachms.

Dissolved in water-gruel.

If it be necessary to obviate costiveness, give—

Epsom salts, - - -	8 ounces.
Emetic tartar, - - -	1 drachm.

Dissolved in one quart of water-gruel. If a ball should be preferred, and the throat be not sore or swelled, give the following:

Aloes Barbadoes, - -	8 drachms.
Castile soap, - - -	2 drachms.
Ginger, - - - -	1 drachm.

To be made in a ball with syrup of buckthorn.

The cough generally goes off when the inflammation ceases: but should it become a *chronic cough*, the horse should be exposed as little as possible to any violent changes of temperature, and, if the summer be warm and dry, two or three months' run at grass will generally effect a cure; and if the horse be a foul or greedy feeder, he must never be permitted to eat new hay or new oats. The following ball is also excellent in such cases;

Liquorice powder, - -	6 ounces.
Castile soap, - - -	6 ounces.
Aniseeds powdered, - -	6 ounces.
Barbadoes tar, - - -	6 ounces.
Gum ammoniac, - -	2 ounces.
Balsam of Tolu, - -	1 ounce.

Mix the whole, and divide it into twelve equal balls. One ball to be given every other night, till the whole are used.

Some practitioners recommend tar very much, which is given as follows;

Barbadoes tar, - -	1 ounce.
Vinegar of squills, -	1 ounce.
Oil of aniseeds, - -	1 tea-spoonful.

Mixed in a quart of warm ale.

However it is always necessary to observe, that whenever the cough is attended with symptoms of other diseases, mere cordial or pectoral medicines can be of little service.

57. Consumption.

Symptoms.—This disease is not so common amongst animals as human beings; but it does sometimes occur, and is indicated by a loss of vigour and strength; the appetite also declines, and the horse stales and dungs often. Some survive for several months, and others go off very suddenly.

Mr. Lawrence says, ‘When a consumption arises from any defect in the lungs or principal viscera, the eyes look dull and a little moist, and the ears and feet are generally hot. There is generally a dry husky cough, and a groaning when turned suddenly in the stall; the horse sneezes much when brought into the cold air, and shews uneasiness and a quick motion in his flanks, discharges occasionally at the nose, and generally a yellowish curdled matter. His breath also smells more or less offensive, when the disease has made much progress, or been of long continuance. They eat but little at a time, and chew their hay very lightly and deliberately, and very often throw the cud out of their mouths after chewing it. In general they are hide-bound, and their coats are long, dry, and staring, even in summer. These symptoms disappear upon being turned to grass in warm weather, owing to the richness and succulence of the herbage, but they soon return when in the stable and again put to work.

'When a horse that has any of the above symptoms retains a tolerable appetite, and keeps up his spirits in a certain degree, without losing his flesh, it is a sign that the disease has not yet taken a very deep root; but, on the contrary, when he continues to lose flesh and strength, it is a pretty certain indication of inward decay beyond the power of medicine to prevent. When there is a yellowish curdled matter discharged from the nostrils, it may generally be considered as the last stage; but, if the matter be white and well digested, and occasionally decreases in quantity or changes to a clear water, it is a promising sign, especially if the horse be young; but, even under these circumstances, the predisposition to disease may still exist, and the smallest irregularity, either in diet, clothing, or exercise, may bring on a return of the complaint.

'Some young horses continue in this consumptive state for several months, and, through the effects of great care and nursing, give at some intervals a prospect of recovery, but, nevertheless, die ultimately exhausted by disease. Some go off in a much shorter time, although they are not apparently so much debilitated, and some recover after a discharge from the nostrils even of two or three years standing; but, in this last case, the discharge has been suspended at intervals, and the mucus was always white, and when it ceased at any time, it was generally succeeded by a simple discharge of clear lymph or water.

'Such horses will retain their appetite, and not lose their flesh, and will go through their work tolerably well with good usage, though, if they are hurried a little more than ordinary, they will be the worse for it; and those to whose lot such horses have fallen, must have observed, that they seldom recover perfectly or remain long well, until they are seven or eight years old, when their complaints frequently go off, and they become healthy and useful animals.'

Causes.—This state of disease may proceed from a variety of causes; from colds imperfectly cured, or from the farcy or glanders having fixed on the lungs. Hot and irritable horses are most subject to this disorder, as they are apt to over-exert themselves, so as to bring on a state of exhaustion.

Cure.—Consumptions being preceded by inflammations, bleeding is necessary, after which the bowels should be opened by clysters and gentle purges, as the following:

Soccotrine aloes, -	5 drachms.
Castile soap, - -	half an ounce.
Oil of carraway, - -	10 drops.

Treacle enough to make a ball.

The horse to have bran-mashes and water with the chill taken off, and to be kept moderately warm, when he may be given the following ball every other night three or four times:

Assafœtida, - - -	1 drachm.
Emetic tartar, - - -	1 drachm.
Ginger, - - - -	1 drachm.

Liquorice powder sufficient to make a ball.

Mix up the whole with the syrup of buckthorn. This ball will relax and soften the skin, and promote insensible perspiration. The following is also a good medicine for this purpose:

Ginger, - - - -	2 drachms.
Emetic tartar, - -	1½ drachm.
Camphor, - - -	1½ drachm.
Opium, - - - -	1 scruple.
Oil of carraway, - -	10 drops.

Molasses enough to make a ball.

During the administration of these medicines, the horse should be every day walked about. His food, if possible, should be green, and if in winter, carrots should be substituted. His oats also should be hard and sweet, and the hay good. When recovered, his work should be gentle, and he should be kept in the fresh air as much as possible.

58. Loss of Appetite.

Symptoms.—This state of disease is usually called *chronic indigestion*, and is discovered not only by a want of appetite, but also by a roughness and staring of the coat.

Causes.—Loss of appetite is very frequently only the symptom of other diseases, and must be treated accordingly. However it sometimes is the effect of weakness of the stomach, induced by the improper use of cordial medicines: and other times it is produced by fatigue, or too close confinement, or from the stomach being loaded with coarse, dry, and indigestible food.

Cure.—If the horse be free from any inflammatory complaint, and the loss of appetite clearly proceeds from a weakness of the stomach, the following cordial ball may be given every day:

Carraway seeds powdered,	6 drachms.
Ginger powdered,	2 drachms.
Oil of cloves,	15 drops.

Molasses sufficient to make a ball.

Or the following:

Grains of paradise powdered,	3 drachms.
Carraway seeds powdered,	3 drachms.
Ginger,	1 drachm.
Oil of mint,	30 drops.

Honey enough to form a ball.

These balls tend to strengthen the stomach and to restore the appetite. In the mean time, it is essentially necessary that the horse be kept clean, and regular in his bowels, have food of a nourishing quality, and be given good clear water several times in a day, as nothing tends more effectually to promote digestion. He should also be daily exercised gently in the open air.

59. Foul-Feeding.

Symptoms.—This affection of the stomach is indicated by the horse eating voraciously, or greedily swallowing substances that are indigestible, such as clay, mortar, dirty foul litter, or even the dung of other animals. Such horses are called *foul-feeders.*

Causes.—This is properly a symptom of indigestion, and is evidently owing to a peculiar acrimony of the gastric juice; and in most cases there is clearly an acid upon the stomach.

Cure.—The cure of this disease should commence by giving a purge, as the following, if the horse be costive:

Soccotrine aloes,	1 ounce.
Castile soap,	half an ounce.
Calomel,	1½ drachm.
Oil of mint,	20 drops,

Mixed with molasses sufficient to make a ball.

When this laxative has ceased to operate, give the following ball every other day until the disease seems to be removed.

Purified soda powdered, -	2 drachms.
Gentian root powdered, -	2 drachms.
Cassia powdered, - -	1 drachm.

Treacle enough to form a ball.

In the mean time, the horse should be regularly exercised, and the stable kept particularly clean, with a quantity of clean straw under the manger, that he should not be tempted to eat other substances that are more injurious.

60. PLETHORA.

Symptoms.—When a horse becomes fat, corpulent and full of blood, he is called *plethoric*. The veins, in this state, become full and distended; the pulse full and strong, though sometimes oppressed and slower than natural: The animal exerts himself with evident difficulty, and soon becomes fatigued and exhausted. If put to hard labour, he is generally soon knocked up, or dies on the road; or else he becomes broken-winded, or is attacked by the apoplexy, or an inflammation of the lungs.

Causes.—This diseased state of the body is very common in horses, and arises from idleness and being pampered with high living, in order that they may look well and seem as in high condition.

Cure—When there appears no symptom of an approaching apoplexy, it is best to lower the animal's diet gradually, and as gradually increase his exercise or labour. Bleeding, when it can be safely avoided, is extremely improper, as it tends to produce the very state against which it is employed. If the symptoms appear alarming, the same precautions must be used as is directed in case of the *Staggers* or apoplexy.

61. WOUNDS.

The treatment of wounds generally is a branch of the greatest importance in the practice of farriery; yet it is very imperfectly understood, and many foolish and injurious opinions are entertained on the subject. The proper treatment of wounds must depend in a great measure on the part where they are inflicted, and the form of the instrument that produced them. A clean cut made in the muscular parts it easily healed, by applying slips of sticking plaster as soon as possible, so as to keep the edges of the wound close together; or where plaster cannot readily be applied, by taking a stitch or two through the edges of the wound, and tying the strings gently together. When the edges are found to adhere, the strings must be cut away, and the holes which they made will soon fill up. If any considerable blood-vessel has been wounded, it will be proper to secure it, if possible, by means of ligature, rather than by applying any styptic substance. All wounds should be made as clean as possible before any attempt is made to heal them. Sometimes the wound is so situated that it will not admit of being sewed up; but in these cases we may in general pass silver or steel pins from the edges, at about an inch distance from each other, and twist a thread crosswise from one to the other, so as to form what is called the *twisted-suture*. In all cases where sutures are used, it will be proper to apply a sticking plaster over the edges of the wound. If the wound should not heal by these means, a formation of matter will take place, and then the sore is to be treated as a common ulcer, taking care that its edges be always kept as near together as may be, by sticking plaster or a bandage.

Mr Richard Lawrence has some very judicious observations on this subject. 'In all recent wounds,' says he, 'the first step necessary is to probe them, to ascertain whether any extraneous substance, such as splinters of wood, be left in the inside. These should be instantly and carefully removed, for the wound cannot heal whilst any substance of that description remains within it; and, indeed, the inflammation is sometimes so much increased from that circumstance, that mortification ensues, and, with it, the death of the animal. If the wound arises simply from a cut, or from laceration, without being accompanied by any bruise, the divided edges should be brought together as soon as possible, by sewing them with common brown thread and the application of a bandage, and the external inflammation may be moderated by simple fomentations of bran and water. For there is generally inflammation enough in the injured part to carry on the healing process without having recourse to stimulating applications, and caustics are wholly unnecessary and improper in all fresh wounds. But the almost invariable practice of country farriers is to introduce a tent of tow dipped in some strong oils, in which case the inflammation is increased, and nature, in making fruitless efforts to close the wound, whilst it is thus kept asunder by the interposition of the tent, is excited to an excessive degree, and a great quantity of proud flesh, or superfluous granulations, arise at the edges, which soon become diseased; and that which was at first but a simple healthy wound is converted, by injudicious treatment, into a foul and callous ulcer.

'The benefit of healing wounds by the first intention is particularly manifest in cases of overreaches on the heels of the fore-feet from the shoes of the hind-feet. For in these cases nothing more is necessary than to wash the part thoroughly with warm water, so as to remove all sand or dirt whatever, and then to keep the divided parts together by a bandage, and not to remove it for three or four days at least. The coagulable lymph will then be thrown out from the mouths of the vessels, and the surfaces will be found glued; and this constitutes what is called healing by the first intention, and this process may generally be adopted with success where the wound is of a simple nature. In compound wounds, where the bone has been injured as well as the muscular parts, it is more difficult and sometimes impossible to heal by the first intention; first, because the consequent inflammation is more violent, and, secondly, because the fractured parts of the bone become, when detached, extraneous substances, and must be brought away before the wound can thoroughly heal. Hence it sometimes happens that the surface of the wound heals whilst the bottom or internal part is unsound, owing to the circumstance of the bone not having exfoliated, and the irritation being still kept up, a fresh degree of inflammation ensues, and the wound suppurates and breaks out again.

'In this case (and in this only) the mouth of the wound may be kept open by the introduction of tents; and if the abscess has not a sound, healthy appearance, such caustic applications may be used as will destroy the diseased surface, and produce a healthy action in the part, which is always manifested by red granulations, and the secretion of pure white matter of a proper consistence.'

When a tendon is wounded, it should be fomented with warm fomentations of bran and water. Violent caustics and spirituous applications are, for the most part improper. When the wound heals slowly, it may be touched with the butter of antimony, and covered by a large pledget of tow, with digestive ointment, and bound with a bandage.

Wounds in the joints are sometimes dangerous, and always difficult to cure. The cautery is the shortest and most effectual mode of relief. Where this is not used, the wound should be excited by applying slightly to the surface the butter of antimony, and, when it is healed, a pledget of tow dipped in the following lotion:

Golard's extract, - -	1 drachm.
Vinegar, - - - - -	1 pint.

To be mixed in a quart bottle, and filled up afterwards with water. The pledget to be bound moderately tight with a flannel bandage.

If the wound be very deep, a poultice of bran may be used two or three days. It is best kept on by the leg of a worsted stocking, which may be drawn up over the knee, and tied both above and below, but not too tight. Afterwards apply the following dressing:

Verdigrease, - - -	2 drachms.
Digestive ointment, -	2 ounces.

In case of gun-shot wounds, it is always advisable to bleed the horse. Probing is to be avoided as much as possible; but the wound may be laid open, in order to extract the ball. If the ball has sunk deep, it is best to leave the working of it out to nature. All unctious applications are to be avoided, and the wound dressed with turpentine mixed with honey or the yolks of eggs. If proud flesh arises, mix a little red precipitate with the ointment. In the mean time, cooling and opening medicines will have a good effect.

62. LOCKED-JAW.

Symptoms.—Horses are extremely subject to the *Tetanus*, or locked-jaw, which proves one of the most obstinate and fatal diseases by which they are affected. It usually begins with some degree of fever; and, as it increases, the neck becomes stiff, and the head fixed and immoveable, and somewhat elevated, with the ears and tail erect and motionless; the muscles about the mouth are contracted, the eyes express great animation and anxiety, and the haw is drawn partly over the eye-ball; the nostrils are distended, the breathing difficult, the jaws fixed, and the legs nearly incapable of motion.

Mr. Gibson has described this dreadful disease very accurately, though his expressions are uncouth. He says, 'As soon as a horse is seized in this manner, his head is raised with his nose towards the rack, his ears pricked up, and his tail cocked, looking with an eagerness, as an hungry horse when hay is put down to him, or like an high-spirited one when upon his mettle: in so much that those who are strangers to such things, when they see a horse stand in this manner, will scarce believe any thing of consequence ails him; and I have seen such persons greatly surprised when they have been told of the danger. But they are soon convinced when they see other symptoms come on apace; that his neck grows stiff, cramped, and almost immoveable; and if a horse in this condition lives a few days, several knots and ganglions will rise on the tendinous parts thereof; and all the muscles, both before and behind, will be so pulled and crampled and stretched, that he looks as if he was nailed to the pavement, with his legs stiff, wide, and straddling; his skin so tight on all parts of his body, that it is almost impossible to move it; and if trial be made to make him walk, he is ready to fall at every step, unless he be carefully supported; his eyes are so fixed with the inaction of the muscles, as gives him a deadness in his looks. He snorts and sneezes often, pants continually with shortness of breath: and this symptom increases till he drops down dead, which generally happens in a few days, unless some very sudden and effectual turn can be given to the distemper.'

Mr. Lawrence justly observes, that it is a very erroneous opinion to suppose that the locking of the jaws, and the being incapable of receiving any sustenance, is the cause of the animal's death. The fact is, that death is the consequence of suffocation, arising from the rigidity reaching the muscles of the ribs, in which case their expansion is prevented, and the breathing of course is stopped. It is probable also that the action of the heart and arteries is suspended from the same cause.

Causes.—This disease is generally primary; but it is sometimes symptomatic, and may be produced by various causes, particularly from wounds, where the nerve is partially divided; from cold, when the body is in a profuse sweat. It may arise also from internal irritation, as from worms, which, in Mr. Gibson's opinion, are a very common cause of it. Probably it more frequently proceeds from wounds, as a puncture in the foot or any other part; and it has certainly often been brought on by the barbarous operation of *docking* and *nicking*. There seems no doubt that the brain is the principal seat of the affection.

Cure.—Instances of recovery from this disease in horses are very rare. It is, however, necessary to use some vigorous means as early as possible. Opium, aconite, hellebore, &c. have been tried in the veterinary college in very large doses, but without any beneficial effects. From considering it as a disease of the brain, trepanning has been used, with the view of making pressure on the brain, and this has sometimes appeared to take off the spasm of the muscles; but as soon as the pressure was removed, the spasms returned with nearly equal violence. An infusion of tobacco, to the amount of two pounds, has been given by Mr. Coleman; but the symptoms appeared to be aggravated. Mr. Feron recommends bleeding, and immersing the animal in a warm bath at 90 deg. of Fahrenheit, so as to keep the whole body covered with the water for two or three hours, which he has known to be successful: but the horse must afterwards be clothed and kept very warm. The most probable means to relieve the animal seem to be giving opium in large doses by way of clyster, frequently repeated, and rubbing the whole body frequently with some stimulating liniment, such as oil of turpentine and tincture of cantharides. Mr. Blaine recommends a clyster composed of a strong decoction of poppy heads, with two ounces of camphor dissolved in brandy; or if this be thought too expensive, one with two ounces of spirit of hartshorn, and four ounces of oil of turpentine, mixed with two or three yolks of eggs, and a pint of ale. Mr. Moorcroft recommends the cold bath, or the copious effusion of cold water. A German physician has very recently found the carbonite of pot-ash and opium produce a wonderful good effect in cases of *tetanus* in human beings, and it therefore deserves a trial in the same fatal disorder in horses.

Mr. Wilkinson, a skilful veterinary surgeon in Newcastle upon Tyne, has lately published a very valuable work explanatory of his method of treating this terrible disease, with a great number of cases in which he effected a complete cure. The following is a very brief sketch of his mode of treatment; but those who wish to examine fully his practical remarks and interesting illustrations, must consult the author's own work.

As a horse is generally very costive in this disorder, Mr. Wilkinson advises to give a purgative drench, composed as follows:

Barbadoes aloes, - -	8 drachms.
Soap, - - - -	4 drachms.
Ginger, - - - -	3 drachms.
Treacle, - - - -	2 ounces.
Oil of aniseeds, - -	30 drops.

The aloes, soap, and ginger, to be beat well together and made into an electuary with the treacle and oil of aniseeds, and the whole afterwards mixed in a pint of warm water. This is a sufficient dose for a middle-sized saddle horse.

As the stomach and intestines in this complaint are not very susceptible of being acted upon, the following clyster is recommended at the same time:

Olive oil,	8 ounces.
Water gruel, warm,	2 quarts.

If the horse is in a plethoric state, and his pulse and respiration have become much hurried, a moderate quantity of blood may be drawn from the jugular vein; and this operation must be repeated according to circumstances.

Mr. Wilkinson advises the diet to consist of thin bran-mashes, oatmeal gruel mixed with milk, or a little good clover when the jaws are not too much shut. The muscles of the head, jaws, neck, and back, to be rubbed with the following liniment:

Oil of turpentine,	half an ounce.
Water of pure ammonia,	half an ounce.
Mustard powder,	2 ounces.
Olive oil,	2 quarts.

Immediately after applying this liniment, cover the body with sheep skins, as recently taken off the sheep as possible; the skin to be innermost. This eminently tends to increase the perspiration, and consequently to relax the muscles. Great care is necessary lest the perspiration be obstructed by cold.

When sheep skins cannot be procured, a blister may be applied the whole length of the spine, the hair being previously clipped off. If the disease has made much progress, apply a blister also over the skull, and about eight inches backwards on each side of the neck, in the direction of the vertebræ. The following formula is given for the blister:

Cantharides powdered, -	1 ounce.
Euphorbium powdered, -	2 drachms.
Oil of turpentine, - -	1 ounce.
Hog's lard, - - -	6 ounces.

When the blister has ceased to operate, and the swelling occasioned by it has subsided, begin the use of the liniment and sheep skins.

Mr. Wilkinson has also found powerful antispasmodics, given after the purgative drench is done operating, very serviceable. The following is recommended:

Crude opium, - -	1 drachm.
Camphor, - - -	1 drachm.
Assafœtida, - - -	2 drachms.

Dissolve the opium in water, and the camphor and assfœtida in spirits of wine; then add aniseeds powder sufficient to make a ball.

Great care is required in giving this ball when the jaws are much shut. The ball should be given in small pieces on the end of a piece of whalebone or cane; or the ball may be dissolved in a pint of a decoction of rue, and given as a drench morning and evening with a small horn. Considerable time and care should be taken in administering this medicine, lest part of it be lost, or the convulsions increase.

Immediately after the ball or drench has been given, dissolve one of the same balls in three pints of a decoction of rue, and give it as a clyster morning and evening. The decoction is made thus.

Rue, - - -	three handfuls.
Water, - - -	three quarts.

Boiled down to two quarts and strained off.

Great attention is requisite in increasing or diminishing the quantity of opium, according to the violence of the spasms, and the effects it is observed to produce in the system.

If the clysters act too powerfully as an astringent, this may be counteracted by adding to each four drachms of common soap; and if the bowels become obstinately costive, repeat the purgative drench at intervals of about a week. If the muscular system is found very rigid, or the horse lies down, this writer advises to have him slung, which will also facilitate the administration of the medicine.

In case the disease has completely locked the jaws, both the medicines and food must be administered in the form of clysters. The quantity of medicine in each clyster must be considerably more.

Mr. Wilkinson disapproves the amputation of the injured part in the tail, when the disease originates from docking; nor is he partial to incisions or caustics, when the complaint arises from a wound in any other part of the body. He prefers warm fomentations, dressings of digestive ointment to the wounded part, and, above all, strict attention to internal medicines.

63. Bite of a mad Dog.

The most effectual method of cure, and indeed the only one that should be depended upon, is instantly to cut out the part bitten, and afterwards to cauterize it with a hot iron. The surrounding parts should be well rubbed with the following liniment:

Olive oil, - - - -	2 ounces.
Water of pure ammonia, -	1 ounce.
Opodeldoc, - - -	1 ounce.
Tincture of opium, - -	1 ounce.

Mixed. After which dress the wound with the following ointment:

Common turpentine, -	3 ounces.
Bees' wax, - - -	3 ounces.
Black pitch, - - -	1 ounce.
Yellow resin, - - -	6 ounces.
Linseed oil, - - -	1 pint.

Dissolve them together over a slow fire; then take it off, and add—

Spirits of turpentine, -	4 ounces.

Put the whole in a pot, and stir till it begins to settle.

If any feverish symptoms appear, administer the following drench:

Mithridate, - -	1 ounce.
Peruvian bark, - -	half an ounce.
Aromatic spirit of ammonia,	1 ounce.
Castor oil, - -	8 ounces.

Mixed in a quart of warm gruel. This drink to be given twice a day if necessary.

The following is recommended by old farriers as a cure for the bite of a mad dog.

Musk, - - - -	16 grains.
Native cinnabar, - -	25 grains.
Factitious cinnabar, - -	25 grains.

To be given in a glass of arrack three nights together, and the night preceding the full of three successive moons.

But no dependence ought to be placed on specifics; and if the part bitten cannot be cut away, it is best to destroy the animal immediately, as other remedies may prove fatally fallacious.

64. Venomous Bites and Stings.

The bite of a viper or adder may be cured, if early attended to, by rubbing the afflicted part, or the whole limb, for a considerable time with warm salad oil; repeating it two or three times a day. If the liniment recommended in the preceding article can be procured in a short time after the bite, it will be far better and more effectual in arresting the progress of the venom. This mixture will also be found excellent in cures of stings by hornets or wasps. If internal medicine is requisite, the following may be given:

Mithridate, - - -	1 ounce.
Salt of tartar, - - -	2 drachms.

Dissolve them in a pint of rue tea, and then add—

Salad oil, - - - -	4 ounces.

To be given about milk-warm.

65. THE TOOTH-ACHE.

Mr. Richard Lawrence observes, that this complaint proceeds from the canker in the grinders: the best cure in this case is immediately to punch out the afflicted grinder or tooth. The canker is generally owing to the bridle being rusty, and may easily be known by the little black blotches, or brown specks, which appear on the tongue, or other parts of the mouth. If not caused by the bridle-bit, like the scurvy in the human frame, it proceeds from bad diet, or may be deemed hereditary, and then it appears in small white specks, and will, in time, spread nearly over the whole of the mouth, and occasion irregular ulcers. The following gargle mixture will be found in this care an effectual cure:

Wine vinegar, - -	half a pint.
Burnt alum, - -	1 ounce.
Common salt, - -	1 ounce.
Bole armenic, - -	half an ounce.

Mix and shake the whole in a bottle for use.

With this mixture the horse's mouth should be dressed every morning and evening in the following manner:

Take a small cane, or piece of whalebone, half a yard long, and tie a linen rag, or a piece of tow, round one end; then dip it into the mixture, and d

Fig.1.

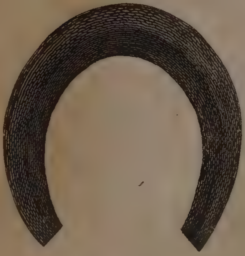


Fig.2.

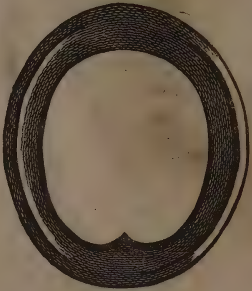


Fig.3.

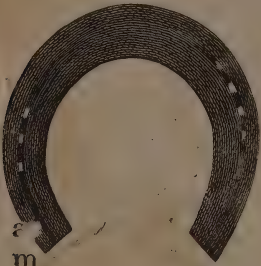
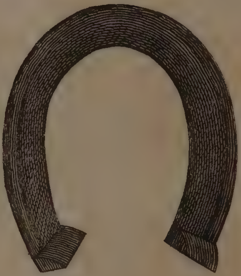
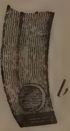


Fig.4.





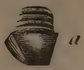


Fig.1. The concave Shoe for flat Soles.

Fig.2. The bar Shoe for tender Frogs.

Fig.3. The Shoe for a sound Feet.

Fig.4. A Frost Shoe.

a. The sharp wedge screwed into the heel.

b. The female screw in the heel. (see appendix) pass it up his mouth, and gently run over it to all the affected parts: let him chump it well about his mouth, and fast about an hour afterwards.

Having thus noticed the most common and important diseases to which horses are subject, and explained the different approved modes of treatment, it will now be necessary to give some plain, practical directions on the best way of performing some of the most useful and common operations in farriery. In the *Appendix* a great variety of useful recipes will be given, properly classed, and forming a valuable summary of VETERINARY MATERIA MEDICA.

66. SHOEING.

Shoeing is a most important operation, and has certainly been much studied and improved in modern times. Those who are desirous of obtaining an accurate knowledge of the anatomy of the horse's foot, ought to consult Mr. Coleman's elegant work on its structure, economy, and diseases, wherein the muscles, blood-vessels, nerves, and absorbents, are well described and beautifully figured. The following plain summary of the structure and functions of the foot may, however, be easily understood, and remembered by ordinary readers, and will be found of great service in imparting a knowledge of the subject. It appears then,

That the natural form of the hoof of the fore-feet of horses, before any art has been employed, approaches to a circle; and,

That the internal cavity of the hoof, when circular, is completely filled by the sensible parts of the foot.

That the hoof is composed of horny insensible fibres, that take the names of crust, sole, bars, and frog.

That the crust is united with the last bone of the foot, by a number of laminated elastic substances.

That the uses of the laminæ are to support the weight of the animal, and from their elasticity to prevent concussion.

That the horny sole is externally concave, internally convex, and united by its edge with the inferior part of the crust.

That the uses of the horny sole are to act as a spring; by descending at the heels; to preserve the sensible sole from pressure, and (with its concavity) to form a convexity of the earth.

That the external bars are nothing more than a continuation of the crust, forming angles at the heels.

That the internal bars are a continuation of the laminæ of the crust, attached to the horny sole at the heels within the hoof; and that these insensible laminæ are intimately united with sensible laminated bars, connected with the sensible sole.

That the use of the external bars, is to preserve the heels expanded; and the use of the internal horny bars, to prevent separation and dislocation of the horny sole from the sensible sole.

That the external frog is convex, and of an insensible horny elastic nature.

That the internal sensible frog is of the same form, very highly elastic, and united with two elastic cartileges.

That the frogs are not made to protect the tendon, as Mr. St. Bel and other writers have supposed.

That the use of the frog is to prevent the horse from slipping, by its convexity embracing the ground; and from the elasticity of the sensible and horny frogs, they act as a spring to the animal, and keep expanded the heels.

In the common mode of shoeing, the bars are totally cut away, and the frog is considerably pared down, by means of a cutting instrument called a *butteris*. The reason assigned for cutting away the bars, or opening the heels, as it is called, is, that the heels may not contract, and that the shoe may not press upon the sole and occasion corns. The hoof being thus prepared, the shoe is to be applied. The common form of this shoe is nearly elliptical, being broader at the fore part, and growing narrower towards the heels, where it is thicker than at the toe. It is convex on its outer surface where it is to touch the ground, and concave on its inner part, which is applied next the hoof. It is fastened to the hoof by means of eight nails, four in each quarter; and the heads of these nails are nearly cubical, standing out a little beyond the shoe. This shoe is commonly applied nearly red-hot, in order to adapt it better, and make it fit closer to the hoof.

The following consequences must result from this injudicious mode of shoeing:

1. The functions of the bars, which are evidently intended to prevent contraction of the feet, must be destroyed.

2. Cutting away the frog exposes this part to injury, and is productive of many diseases.

3. The elevation of the heels prevents the frogs from embracing the ground, for which they were naturally intended.

4. By making the shoe concave at the quarters, and placing the nails near the heels, the growth of the crust is impeded, the foot contracted, and its proper shape destroyed.

5. By fastening the shoe near the insensible frog at the heels, the proper action of the frog and sole is prevented, and the foot loses its natural spring.

6. Putting on the shoe hot dries up the moisture of the crusts, and sometimes utterly destroys them.

7. By making the shoe rounded next the ground, the sure footing and power of the horse is very much lessened.

The first modern writer who attempted to reform the common mode of shoeing, appears to have been

Lafosse. It is true that an excellent mode of shoeing was recommended about 300 years ago by Cæsar Fiaschi, an Italian writer on horsemanship; but his plan never came into general use, and Lafosse appears to have all the merit of the improvement, as it is more than probable that he had never seen Fiaschi's work. The shoe recommended by Lafosse was what he called the half-moon shoe, being nearly semicircular, and reaching little further than to the middle of the foot; the nails being placed round the toe. Lafosse's shoe was never very generally employed in this country, even though the improvement was rendered familiar by Bracken and Bartlet, who translated Lafosse's treatise into English. It has been considered as useful in some cases of diseased feet, and for strong feet which have begun to contract, or appear likely to do so, provided such horses are not employed on very hard, rough roads; but it is by no means applicable to the majority of our horses. Its principal disadvantages appear to be, that the heels wear too fast, and that, in running, horses are apt to slip with it.

Mr. William Osmer improved considerably on the shoe of Lafosse. He forbade the frogs and bars to be cut away, except when they were ragged. He, however, remarks, that the feet of all horses should be pared according to their length; the crust being made perfectly smooth by paring or rasping. His shoe was every where of an equal thickness, rather narrower behind than before, of a flat surface next the ground, and bevilled away from about the middle of its breadth inwards, leaving a flat surface for the crust to rest on.

Lord Pembroke's remarks on shoeing are exceedingly ingenious. He observed that the weight of shoes must, in a great measure, depend on the quality and hardness of the iron. If the iron be very good, it will not bend, and in this case the shoes cannot possibly be too light; care, however, must be taken, that they be made of a thickness so as not to bend, for bending would tear out the nails and ruin the hoof. That part of the shoe which is next the horse's heel must be narrower than any where else, that stones may be thereby prevented from getting under it, and sticking there, which otherwise would be the case, because the iron, when it advances inwardly beyond the bearing of the foot, makes a cavity, wherein stones, being lodged, would remain, and by pressing against the foot, lame the horse. The part of the shoe which the horse walks upon should be quite flat, and the inside of it likewise; and only just room enough should be left next the foot to put in a picker, (which ought to be used every time the horse comes into the stable, and often on marches) and also to prevent the shoe's pressing upon the sole. Three, or at most four nails of a side, hold better than a greater number, and keep the hoof in a far better state. He advises that the toe of the horse be cut square and short, and that no nails be placed in that part. By these means narrow heels are prevented, and many good effects produced. His lordship advises the hinder feet to be shod in the same manner as the fore-feet, except in hilly and slippery countries, where the shoes on the hinder feet may be a little turned up behind.

The utmost severity (says lord Pembroke) ought to be inflicted on all those who clap shoes on hot. This unpardonable laziness of farriers in making feet fit shoes, instead of making shoes fitting feet, dries up the hoofs and utterly destroys them. Frequent removals of shoes are detrimental, and tear the foot, but sometimes they are very necessary.

The shoe recommended by Mr. Clark did not differ very much from that of Osmer. He does not, however, recommend the hollowing of the surface of the shoe next the foot. Mr. Clark recommended that the hoof and frog should not be pared or cut away without necessity, and was much against raising the heels with calkins; to the use of which he preferred that of an ice nail. He, however, admits, that sharp calkins may be necessary in hilly countries.

Several valuable improvements in the art of shoeing have been made by the veterinary college; and Mr. Coleman has done much to extend our knowledge on this subject. But perhaps the college has recommended alterations too hastily, and which naturally tends to decrease public confidence.

The French blacksmiths are neither so neat nor handy in their operations as the English, but they have a better method in driving the nails. The English blacksmith drives the nails up the wall as high as possible, so as to leave but a very small portion of the nail to clench; whereas the French drive them so obliquely outwards, as that the points come out at about three-quarters of an inch above the shoe. This method is safe, and holds the shoe firmer than if the nail had been driven higher up.

The following general rules will be found useful in almost every case that can occur.

1. The length, breadth, and thickness of the shoe ought to vary according to the form of the hoof. The hoof should never be made to fit the shoe instead of the shoe the hoof.

2. In preparing the foot for the shoe, the dead surface of the sole, and the ragged edges of the frog, should be cut away with the drawing knife; but the heel must not be scooped out or notched. The bars or binders should not be cut on any pretence whatever.

3. The shoes of colts should be shaped exactly to the hoof, which at first is always circular: they should also be light, and only wide enough to admit the nails.

4. The shoe for a well formed hoof should not be above three-quarters of an inch broad, perfectly flat, and of the same thickness throughout.

5. The shoe should not be *fullered*, but holes punched out sufficiently large to bury the head of the nails. This renders the shoe stronger and more secure.

6. An ordinary saddle-horse will require a weight of shoe and nails from 12 to 14 ounces; but a moderate sized coach-horse will require from 18 to 20 ounces.

7. In shoeing a *hollow* sole, the heels should be pared low, and the quarters rasped.

8. When the sole is flat, and the wall thin and weak, the heels must not be pared, but the toe should be kept short. The shoe must be broader than usual, and adapted in some measure to the convexity of the sole. The surface of the shoe next the ground should also be flat, by bevelling it from the outer edge of the web to the inward edge, so as to leave a sufficient space between the shoe and the sole.

9. All changes in the form of the shoe should be made gradually.

10. In order to preserve the shape of a colt's foot, the shoe should be full sized, and new ones put on every month.

11. The sole of the foot should never, in any case, come in contact with the shoe.

12. The frog should, in almost every case, be allowed to come in contact with the ground.

Pattern shoes may be made for a *good foot;* but every general rule must vary according to the effects that may have been produced by bad shoeing or disease.

67. CASTING.

There are several tedious and painful operations that we are sometimes obliged to perform, and which it would be difficult, or impossible to execute, were the animal left at full liberty to resist us. It is, therefore, necessary to render ourselves completely masters of him, by throwing him down on the ground, and in a convenient situation, so as not to expose him or ourselves to injury. This operation is called *casting*, and is usually thus performed.

The first object is to prepare a thick bed of straw or litter, not less than eight feet square, to prevent the animal from being hurt in the fall. If the stable be sufficiently large to admit of the bed being made there, it is to be preferred, as, during the operation to prepare for which casting is necessary, the parts operated on will suffer less from exposure to the air in the stable than without doors.

But if there is not room in the stable, the bed must be made in the stable-yard, or rather, if possible, in some field or park adjoining.

The animal is now to be brought to one side of the bed; a strong leather strap, with a buckle at one end, and having an iron ring fixed to it, at a convenient distance from the buckle, is to be fixed round the pastern of each of the four legs, in such a way that the rings of the straps that are round the fore-feet shall be directed backwards, and those of the straps on the hind-feet shall be opposite to these; while the buckles point outwards, to prevent hurting the animal. A pretty strong cord, ten or twelve feet long, is to be fastened to the ring of that strap that has been placed on the fore-foot on that side of the animal which is farthest from the bed: from this ring it is to pass through the ring on the hind-foot on the same side, from which it passes through the ring on the other hind-foot, then through the ring on the other fore-foot, and lastly through that to which it was first fastened. The animal being thus fettered, a number of men are to place themselves beside him, so that he may be between them and the bed, while others are to stand on the opposite side of the litter. Now, the men that are beside the animal, laying hold of the end of the rope, are to pull gradually with considerable force, so as to bring the four feet of the animal as near as possible together. When this is done, the men on the other side standing in a row, one at the head of the animal, another at his chest, a third at his haunches, a fourth at his tail, &c. pull the animal toward them and complete his fall.

It is necessary to observe, that the men who pull the rope, and those who receive the animal on the bed, must not act at the same time; as in this case the shock would be so great and sudden, as probably to occasion some accident, either to the men or to the animal. It is also proper to remark, that the animal must be cast in such a manner that the part to be operated on may be fully in the view and reach of the operator.

When the animal is once on the bed, his head must be held down by a man, and it will be proper to cover his eyes. Another assistant must stand by the cord, which for greater security should be fastened with a knot at the first ring.

There are some little niceties to be observed in casting an animal, according to the operation that is intended to be performed on him; but of these we shall speak when we describe the operations themselves.

68. FIRING.

Firing is the application of a heated metallic instrument, called a cautery, to different parts of the body. The instruments are of different forms, according to the purpose for which the operation is to be performed, and will be described in the following cases to which firing is applicable.

The operation is found of use on several occasions.

1st, In order to oppose the progress of mortification. With this view a cautery shaped like a knife, with a blunt edge and a thick back, is to be employed. This form will also answer for many other cases. There should be several instruments of the same kind, that when one becomes too cool, another may be ready of the proper degree of heat. The heat of the iron intended for the present case should be that of a cherry-red. In applying the iron, the parts adjoining to the mortified place are to be passed over with the edge of the instrument in successive parallel lines, so as the heat may penetrate to the living parts, and thus produce such a degree of healthy action as may enable them to throw off the mortified slough. When the iron has been applied for a sufficient time, which must be regulated by the nature of the part, and the extent of mortification, the wound is to be covered with a pledget spread with some stimulating ointment.

2d, Firing is employed to brace the skin, and to strengthen the sinews. The instrument above described is used on this occasion, but its heat must be somewhat greater. The mode of applying it is to pass the edge lightly and quickly over the skin, describing parallel lines from one end of the part to the other. When one iron has been used in this way, a fresh one is to be taken, and made to retrace the lines first formed, beginning where the last iron left off; and this is to be repeated as often as appears necessary, taking care not to destroy the texture of the skin. It is recommended by some to apply the hot iron so as to burn away the hair, for some time previously to firing the skin; as much time is otherwise lost before the proper impression can be made by the iron. After firing, a blister is sometimes applied, as this is thought to increase the good effect produced by the iron. When firing is employed on the hind-legs, or on any part where the operator would be exposed to danger from the horse's kicking, it is necessary to confine the legs by means of fetters.

3d, This operation has been found useful in spaving, ring-bones, old callous swellings of the back sinews, and in windgalls. For this purpose the irons are used as already directed. It is the custom with some farriers to apply a blister in these cases before firing, in order to reduce the swelling; as they suppose that firing, employed without this precaution, would tend to fix the swelling, and render it incurable. There is probably little foundation for such an idea.

4th, Firing is very frequently had recourse to by way of a styptic, in stopping or checking profuse bleedings, from accidental wounds, or surgical operations. The iron employed with this view has generally a rounded extremity, except in the operation of docking, where an iron in the form of a ring is generally employed.

5th, Another use of firing is in wounds of the joints, or other circumscribed cavities, where it is employed to promote a kindly circulation, and consequent granulation of healthy flesh. It has been employed in these cases by Mr. Coleman, with considerable success.

6th, Firing has been found one of the most effectual remedies in those superficial ulcers that accompany farcy or glanders in the horse; and,

Lastly, The use of the hot iron has been found the only certain means of preventing the dreadful effects arising from the bite of a mad animal, when properly applied after cutting out the bitten part.

69. Docking.

This absurd and inhuman practice is thought to have originated in this country. The operation is never performed amongst the Arabians and other eastern nations. It is undoubtedly a strange instance of prejudice and false taste to deprive horses of such a fine ornament, which has evidently been designed by nature as a protection against flies, gnats, and innumerable other winged enemies, which harass them in the summer months. When our cavalry are sent abroad, the loss of the horses' tails proves a very serious obstacle to the success of the troops. More than one instance of this has occurred. At the battle of Dettingen, in 1743, great part of the British cavalry were absolutely dismounted, from the death of the horses, occasioned in a great measure by the torment which they experienced from the bite of gad-flies and other insects; and at the battle of Minden, in the seven years war, the cavalry of the allies were thrown into so much disorder by these petty enemies, that they had nearly lost the battle. Lord Pembroke declares, that he has seen the cavalry horses belonging to our army sweating, rushing against each other, refusing their food, and absolutely devoured by flies, for want of their tails to brush them off; while those of the horses of the foreign cavalry that had not been deprived of this necessary defence, were cool, tranquil, fed well, and were in good condition.

It is argued, 1st, That a long tail is extremely inconvenient when travelling; 2d, That a short tail strengthens the back, by requiring less nutriment from the body; and, 3d, that a fine, arched, cocked tail is a beautiful object. Now the alledged inconveniences of a natural formed tail are extremely trifling, and are not to be compared with the advantages it possesses. The opinion that docking strengthens the back is, to say the best of it, extremely problematical; and we think few unprejudiced men will deny, that a horse with a long tail is a much finer object than one that is prepetually perking and wriggling his tail in the air, and exposing his bare breech to the broad stare of open day.

The manner of performing this operation is as follows:—Secure the animal by putting a twitch in his nose, and tying up one of his fore-legs. Then feel with your finger and thumb for the third joint from the setting on of the horse's tail; raise up the hair, turn it backwards, and wrap a very small cord tight about that joint; then just below this bandage place the docking shears, and with a firm steady stroke divide the tail. The part round the bone must then be seared with a hot iron of a circular form, just large enough to enclose the bone of the tail; and a small quantity of powdered rosin may also be applied to the part, and melted on it with the iron. The hair may then be untied, and suffered to be in its natural position.

Some bungling performers lay the tail on a block, and chop off the part with a cleaver or hatchet, struck with a mallet. Colts are sometimes docked when only four or five months old; but this is too soon, as it exposes the animal to the attacks of flies and insects.

70. NICKING.

The operation of nicking consists in dividing the muscles that depress the tail, so that the muscles that elevate it may operate freely. It is a cruel practice, and the operation is often productive of fatal consequences.

The tail, in some horses, rises high out of the back, and describes a regular and beautiful sweep, much more elegant than the ascending curve which the nicked tail presents. It cannot therefore be justified in any manner, except in cases where the tail hangs close to the buttocks. The operation is judiciously described by a modern writer on farriery in the following manner:

'The proper mode of proceeding is to cast the horse, and having all the dressings ready, the operator may cut a transverse line across the under part of the tail, at about the distance of two inches from the rump. The first incision should just go through the skin, after which the muscles of each side of the bone of the tail should be divided, taking care to avoid the artery, which generally runs close to the bone. The common practice is to cut three nicks at equal distance from each other; but in general one nick will be sufficient, especially as three are apt to make the tail curve upwards, giving it a vulgar hackney-like character.

'As soon as the operation is over, take some pledgets of tow, rolled up at the ends, so as to tie like a string, and having sprinkled some fine oatmeal upon them, apply it to the divided part of the tail, and tie it on tolerably tight, and over that tie on a flannel bandage. The tail may then be put into the pulley, letting the weight at the other end of the string be just sufficient to keep the tail from falling down. On the following morning, cut the ties of the bandage through with the scissors, leaving on the bandage, which will stick on owing to the coagulated blood. This operation of cutting the tyes of the bandage is necessary to be done on the following day, because the tail swells in some degree, and if confined too long and too tight by the bandage, a very high degree of inflammation and even mortification may ensue. Owing to a want of attention to this circumstance, it is said, that a regiment of dragoons, in the English service, once lost above forty horses in the same week, which had undergone the operation of nicking. After the operation is completed, the tail is to be suspended by a pulley, with a weight at the end of it. The object of this is to keep the divided edges of the muscles apart from each other, so as to prevent them from uniting again during the process of healing.

'It has been customary to make three incisions in the tail; but this is not necessary, one being generally sufficient, as the muscles lose all power of acting below the first incision.

'The bandage may be taken off on the third day, and the tail dressed with common digestive ointment, spread upon pledgets of fine tow, and bound on by a flannel bandage moderately tight. The tail should be suspended by the pulley until it is perfectly healed, care being taken that the pulley will run easily from right to left, and *vice versa*, else the tail might be kept inclining too much to one side.

'Bartlet invented a machine for suspending the tail without the use of a pulley. It consisted of a kind of saddle, or pad, with a groove in it, from which a cord passed to the tail so as to draw it upwards over the horse's back.

'This machine, with considerable improvements, is used by Mr. Goodwin, at Carlton-house stables, and with great success. It is certainly the safest mode of securing the tail from accidents; but it is liable to one objection, which is, that it prevents the horse from lying down during the whole time of its being used, and which may generally be calculated at a fortnight or three weeks from the time of performing the operation.'

In case the tail should swell and discharge a large quantity of matter, it will be proper to take some blood from the horse, and to give him a few of the following diuretic balls:

Yellow resin,	3 ounces.
Nitre powdered,	3 ounces.
Venice turpentine,	3 ounces.
Liquorice powder,	3 ounces.
Ginger,	3 ounces.
Castile soap,	4 ounces.
Oil of juniper,	1 ounce.

With honey or treacle sufficient to make it into a mass for balls. Each ball to weigh two ounces.

71. Cropping.

Taste and fashion have introduced another operation, by which the ears of horses are changed from their natural shape and size, to those which are considered by their owners as more handsome or agreeable. The ears of the horse are seldom of such a shape or size, as to render them inconvenient to the animals, or to unfit them for the purposes for which nature has designed them. This may, however, sometimes happen; and there are some cases of wounds or diseases that may render cropping necessary: but in performing this operation, it should always be kept in mind, that as no part of the animal is made in vain, no more of the ears should be taken away than what is absolutely necessary.

The operation of cropping is performed by an instrument called the *cropping iron*, and a shape of the size of which it is intended the ear shall be, is applied to the ear to mark the line of section. After the ear is cut, the skin and muscles recede considerably from the gristly part; but this seems of little consequence, and the wound heals in a few days without any other attention than confining the animal within doors, and keeping him on a moderate, cooling diet. Horses' ears are sometimes trimmed, as the grooms call it; that is, they are deprived of the fine soft hair that lines the inside of the cavity. This practice is equally absurd with cropping, as will appear from the following observations of Mr. Clark.

The ears of horses, as of other animals, (says Mr. Clark,) are covered on the inside with a short down, intermixed with long hairs, which line the external cavity of the ear, which seems designed by nature to prevent harsh sounds from making too great an impression upon the brain, and likewise to prevent the cold air, rain, dust, flies, &c. from annoying the internal ear. The means commonly used to remove this down, &c. is by the scissors, the flame of a candle, or that of a burning torch. Both the latter are cruel and barbarous, and cause a deal of pain to the animal, not only from the blisters that sometimes rise on the ear after this manner of singing them, but likewise from the means that are used to make horses stand with patience to undergo the operation, that is, a twitch on the nose; and perhaps, if he is troublesome to the operator, one put on the ear. It is to be observed, that horses are very much guided or directed by the sense of hearing. This is obvious in those that hear distinctly, from the motion of their ears, and the direction they give them to whatever quarter any sound comes from, the attention they pay to what passes around them, or to what is spoke to them. Many of them, particularly the finest kind, as they only are liable to this kind of treatment, have the sense of hearing considerably blunted, if not rendered quite deaf from the above operation.

As this operation is generally first performed on young horses at the time they are breaking, it is the more hurtful; as uncommon sounds, such as the rattling of carriages, drums, &c. which are entirely new to them, and to which they are then more exposed on the roads or in streets, must make the greater impression on the sense of hearing: and perhaps it may be owing to the above cause only that many horses are timorous to pass carriages, and remain so ever afterwards.

Another disadvantage which attends this operation upon the ears of horses, is, that they will not go on cheerfully when travelling in opposition to the wind, more especially if it rains; for as the wind and rain get free access into the ears, they are continually shaking their heads and endeavouring to turn from it; and those who are of a more impatient temper will wheel suddenly round, in order to avoid what gives them so much uneasiness. They are then said to be restive; the whip and spurs are applied by way of chastisement for a supposed fault only.

From what has been said, it will be obvious, from the practice of taking away the natural covering from the inside of the ears, that the internal ear must be exposed to be considerably injured, particularly from cold, dust, &c. which blunts the sense of hearing, and perhaps causes deafness; for it is observed in those horses who have been much used to this treatment, that they lose that lively, active motion of the ears, and appear dull and inattentive to what passes around them, and even to the voice of their keeper.

72. CASTRATION.

This operation is found of use as rendering horses more mild and tractable; but it is disputed whether the loss of strength and spirit, which the animal sustains, does not more than counterbalance this advantage.

The best mode of performing this usual operation is, to throw the horse on some convenient spot, on the off side, and when down, let the off hind-leg be drawn towards the neck, by which the scrotum will be fairly exposed. Holding the scrotum firmly, make a cut at once through it, not of too great length, but sufficient to admit the testicle being pressed out; this being done, apply the clams or a pair of nippers on the cord within an inch of the testicle, and hold the clams sufficiently tight to stop the flow of blood, but not to bruise the cord; the stone may then be cut off with a scalpel, or it may be seared off with a burning knife. If it is cut off with a scalpel, immediately before the clams let go their hold, sear the end of the cord. Some apply a little powdered resin on it before searing, after which the clams may be loosened. When this is finished, proceed to remove the other in the same manner.

After both are removed, a pledget of lint, wetted in warmed spirits, may be introduced just within the edges of each wound; but no salt should by any means be introduced, as is the practice of some farriers; nor will any kind of bandage be easily retained, and if any thing of this kind is used, it should be very loosely applied, so as not to irritate.

Some operators separate the epididymis from the testicle, and suffer it to remain, by which means they think that a portion of the animal's spirit is retained. A similar custom is said to prevail in France; but the French operators object to it, on the idea that it produces fistulous sores in the part. The fact is, that when any portion of the testicle is suffered to remain, though it cannot secrete semen, yet it has some action going on within, by which it produces some influence both on the mind and form; and as such, the future growth of the animal may perhaps be slightly affected by it, and perhaps his temper too, but the addition to the latter may probably not be a very favourable one.

Where the operation is to be performed, the best time is probably when the foal is about three months old, though some prefer a much more advanced age, as six, or even twelve months, and more in some cases. In all animals there is, however, the least danger of inflammation while they are young in performing such operations. Besides, it is better to cut colts before they have any propensity to hanker after mares, and get bad habits. When the foals are early, and the weather is not too hot, the latter end of May or beginning of June may be a good and proper season.

Before this operation be performed on a fat horse, he should be bled and kept rather low. It is best performed in mild weather. If there be a considerable degree of inflammation about the part, give the following drink:

Peruvian bark, - -	1 ounce.
Mithridate, - -	1 ounce.
Tincture of opium, -	half an ounce.

In a pint of warm ale.

The part should also be frequently fomented, and washed with a solution of sugar of lead. It will also be advisable to rub some blistering ointment on the inside of the thigh.

73. Bleeding.

The operation of blood-letting is of very considerable importance to a horse, and much danger often results from its being improperly performed. The vein usually opened runs along the neck, and is called the *jugular vein.*

The vein is usually opened by means of a fleam, which is forced into the vein, by striking it with a small wooden mallet, called by farriers a *blood-stick.* There are many objections to this mode of bleeding. In the first place, it is extremely clumsy; and, if the vein happens to roll, which is very commonly the case, a large wound may be made in the skin, without drawing blood. Again, horses are easily frightened by any sudden motion of the hand; and some persons have a way of shaking the blood-stick before they give the stroke; and, in doing this, they often use more exertion than is necessary. The animal alarmed at these strange motions, tosses up his head, and thus renders the stroke uncertain.

Many prefer the ordinary lancet used by surgeons; and, in several cases, particularly of local bleeding, this is the most convenient instrument. But in opening the jugular vein, we do not consider it as much superior to the common fleam. When this latter is employed, the back of it should be made of considerable thickness, as when it is too narrow, as is commonly the case, when the instrument is struck with the stick, it sinks into the channel of the vein, which is often not opened, as the prominent muscles of the neck receive the stroke.

For most purposes of bleeding, we would recommend the spring-fleam, as being easily applied, and much more certain in it effect.

Tying a rope, or any other ligature, about the neck, previous to bleeding, is in some cases improper, and in many dangerous. Rubbing the neck briskly with a wisp of straw will be sufficient to fill the vein. If the horse can stand, a moderate pressure with the finger will make the blood flow freely; but if the horse is lying on the ground, a ligature will not be improper.

The place where the vein is to be opened is of some consequence, as, when the opening is made too far from the head, where the vein lies deep among the muscles, both the vein is not so easily opened, and the wound is not so readily healed. The most proper place for opening the jugular vein is about an inch below the joining of the small branches that come from the lower jaw. This is generally about a hand-breadth from the head, but it may be easily seen by the swelling of the vein when pressure is made on its trunk.

Before opening the vein, it is usual to wet the hairs that lie above it, and to stroke them in the direction of the intended orifice. This is a good practice, as the instrument thus passes through the skin more readily, not having to overcome the resistance of the hair. In mentioning the direction of the orifice, it is worth while to remark, that this should neither be longitudinal nor directly across the vein, but rather oblique; as the flow of blood from an oblique orifice is most easily stopped.

When the vein is opened, it is highly proper in all cases to catch the blood in some convenient vessel. It is a very absurd practice, although it is commonly adopted, to allow the blood to flow at random on the ground or on a dunghill, by which means no precise estimate can be made of the quantity of blood taken away. This may either be so small, as to be of no advantage; or it may be so considerable as to produce fainting, before the operator thinks of stopping the orifice.

For the purpose of measuring the quantity of blood taken away, Mr. White recommends a graduated tin vessel, capable of containing five quarts; every pint being marked on the inside of the vessel, so that the quantity of blood that is taken off may be exactly known. The blood should always be preserved, that we may judge from its appearance of the nature of the disease, and whether it is proper or not to repeat the operation. If the blood continues fluid for a considerable time it shows that there is an inflammatory state of the body; and if a jelly-like substance, or a whitish or light buff colour, and rather firm consistence, appears on the surface after the blood has cooled, and especially if the surface is hollowed, we may be certain that the animal's complaint is of an inflammatory nature, that the bleeding has been proper, and must be repeated if the symptoms continue or increase; but if the blood coagulates quickly, is uniformly of a dark liver colour, loose, and easily broken, with a considerable quantity of water upon its surface, it denotes debility, and shews that the disease arises from a weakness of the system; that instead of *bleeding*, *tonic* and cordial medicines are to be employed, with every thing that may tend to restore the animal's strength.

When a sufficient quantity of blood has been taken away, it is for the most part necessary to secure the orifice, in order to prevent future accidental bleeding. This is usually done by thrusting a common pin through the lips of the wound, and twining about it a little horse hair. As in this way the wound often rankles and becomes a sore difficult to heal, which we are disposed to attribute to the brass pin employed, as often as to any other cause; we would recommend a pin of silver, or at least of polished steel. The pin need not pass through more than the skin; and in some cases, when the horse can conveniently be fastened to the rack after bleeding, the pin may be entirely dispensed with.

As it is often required to bleed on either side of the neck, or on both sides, it is proper that the operator should be able to bleed with either hand. This is indeed not quite so necessary in bleeding horses and cattle as in the human subject; but it will be often found very convenient in both.

In some cases, especially in inflammation of the brain, where a sudden and copious loss of blood is required, it becomes necessary to open the temporal artery. This is easily effected, as the artery is situated very superficially, about an inch and a half backwards from the upper and outer corner of the eye. It is most conveniently opened with a lancet, and when a sufficient quantity of blood has been drawn, the flow is in general very easily stopped by making continued pressure upon the artery; or, if this should not succeed, and a dangerous effusion of blood should be apprehended, this may be effectually prevented by completely dividing the artery.

Mr. Coleman, speaking of the inflammation of the vein which sometimes succeeds bleeding, observes, that 'whenever inflammation attacks the internal surface of veins from bleeding, or any wound, the disease is to be considered as of the same nature, and requiring the same remedies, as the exposure of joints, or other cavities.

'The first symptom of inflammation and suppuration within a vein, is generally a small degree of swelling about the orifice, the lips of which soon recede from each other, and a little oozing escapes from the part.

'At other times, the swelling will be more considerable, attended with frequent hœmorrhage; and where the swelling extends much above the orifice, the vein is frequently callous and enlarged as high as the head.'

On the first appearance of swelling in the part, the pin should be taken out, and the part fomented with warm water four or five times a day, and in the intervals the following lotion may be used, viz.

Golard, - - - -	1 drachm.
Spirits of wine, - -	half a pint.

To be put in a quart bottle, and filled up with water.

This treatment if regularly persisted in for a day or two, will generally remove the swelling and inflammation; but if the horse is fat, and considered to be foul in his body, a mild dose of purging physic may be given with advantage. It frequently happens, that horses which run in mail or stage-coaches are injured in the neck after bleeding, by the rein of the bridle rubbing against the pin which closes the orifice; and indeed instances have occurred of horses which work in the night having the pin forced out, and bleeding until they dropped down before the accident was discovered. But, at all events, a carriage-horse should not be worked on the same day on which he is bled, because the pressure of the collar in drawing always fills the vein by stopping the circulation of the blood, and either prevents the orifice in the vein from closing and healing, or else bursts it open afresh after it has barely united.

When, however, the inflammation and swelling do not subside, and matter forms, the edges of the wound may be dressed with a small quantity of butter of antimony, applied with the point of a feather, which may be used once in three days. At the same time a poultice of bran may be applied, by inclosing the poultice in a flannel bag, and tying it easy round the neck. This will lubricate and soften the skin, and will tend to keep down the inflammation. The common practice is to introduce a small piece of corrosive sublimate, or else to dress the part with aqua-fortis, either of which are very dangerous, because they destroy all the parts which they touch, and the vein being eaten away also, the horse is in danger of bleeding to death, except the vein is tied by a ligature above the orifice.

Another writer on this subject remarks, that, 'the cases where bleeding is required are, violent bruises or strains in the muscular and tendinous parts where they are attended with much inflammation; also large wounds, where there is much laceration without much loss of blood. It is likewise proper in all cuticular disorders or eruptions on the skin, in large swellings on the body or legs arising from a plethoric state; in all deep punctures, when the horse shews symptoms of great pain; and in swelling of the legs or heels, when attended with much inflammation.

'Bleeding is sometimes the speediest method of giving relief in the beginning of inflammatory fevers, to which horses are very liable; it is also necessary, in all violent acute pains, as in the gripes, or colic, stranguary, or suppression of urine; in rheumatic complaints, where the pain causes stiffness, or lameness, and which frequently shifts from one limb to another, or when it affects the neck, and occasions that stiffness and contraction of the muscles, which is commonly called the chords; in inflammation of the eyes, or palate of the mouth, the latter of which is called the lampas, when the horse cannot eat his food on account of the tenderness of the parts—in all recent colds, attended with defluxions of the eyes; in recent swellings of the glands about the throat, jaws, &c.: in inflammations of the liver, the lungs, the pleura, stomach, intestines, kidnies, bladder, or any of the internal viscera; in apoplexy, vertigo, or giddiness, and in all disorders where the head seems affected; in eruptions of the skin, called surfeit; in full habits of body, where proper exercise has been neglected, and when a horse breathes with difficulty on the least exercise. On the other hand, bleeding is to be avoided in cases of all inflammatory swellings after matter has formed. It is also to be avoided in all cases of extreme lowness or weakness, produced by fatigue or disease, or after strong evacuations by purging, or scouring, or diabetes, or excessive staling.

'Bleeding is also improper during the time of a horse's moulting, or shedding his coat; in fact, it should never be practised except some more substantial reason can be given than the mere plea of custom at certain periods of the year.'

Mr. White, in his Materia Medica, says, 'When a horse appears dull and heavy, and indifferent about his food, by bleeding we often prevent a fever. If a horse is bled at the commencement of a cold, the complaint generally proves moderate, and of short continuance. In all cases of internal inflammation, or symptomatic fever, bleeding is the most essential remedy, provided the operation be performed at an early period, and the blood drawn in sufficient quantity. In such cases I have often taken away five quarts, and repeated the operation the following day, when it appeared necessary. By bleeding copiously at first, these formidable diseases are crushed at once; while by suffering them to proceed, or become at all violent, which they will do unless this practice is adopted, (or if only a small quantity of blood is drawn,) they generally prove fatal; nor will bleeding then be of any service.'

Mr. Clark of Edinburgh, in his work on preventing diseases in horses, remarks, 'that although the cases which may require bleeding are numerous, yet there is one general caution to be observed, viz. never to take away blood but when it is absolutely necessary; as it is a fluid that may be easily taken away, but cannot be so easily replaced; besides, that the practice of bleeding frequently, or at stated times, is exceedingly improper, as it disposes the body to become lax, weak, and plethoric.

'In bleeding, therefore, a due regard must always be had to the constitution, age, strength, &c. of horses, and the state or habit of body they are in at the time.

'It is commonly said that the taking away a little blood from horses, even when they are in health, or when they are in the least indisposed, will do no harm: this in one sense may be allowed to be literally true; but why draw blood from them on every trifling occasion, unless there may be such symptoms attending as may require it? I have observed in many horses who have been very frequently blooded, and which may be easily known from the cicatrices or marks on the neck veins, that their blood had lost much of its tenacity, together with a considerable portion of its florid and red colour. Butchers who slaughter calves may find their account in bleeding them frequently, as it renders their flesh white, by taking away the red particles of the blood. But in horses it is quite otherwise; as they are destined for hard labour and active exercises, it impairs their constitutions, subjects them to disease, and hastens a premature old age.

'As the blood of horses, more especially those who are constantly employed in hard labour, or in active exercise, when drawn from a vein, appears of a darkish or deep red colour, even in the highest state of health, it is commonly said to be bad blood, and more so when a thick yellow or buff-coloured crust forms on the surface after it is cold; hence these appearances are said to require repetition of bleeding; for it very unluckily happens, that most of the diseases to which horses are subject are thought to proceed from some impurities or humours, as they are called in the blood, which require to be drained off by bleeding, and other evacuations.'

74. Rowels and Setons.

Rowels in horses are usually made in the following manner:—An incision is made through the skin by means of a very sharp pair of scissors, or, what appears better, a sharp knife. The finger is then introduced below the skin, so as to separate it from the flesh all round, as far as the finger will reach. A piece of leather, about the size of a crown-piece, and of a circular form, with a hole cut in the middle, is then inserted between the skin and muscles, having been first anointed with some stimulating ointment. A small piece of tow or caddice, spread with the same ointment, is put over the hole in the centre of the leather; the skin is laid down over all, and the part is covered with a pledget, also covered with ointment, to keep out the external air.

The leather is left in this situation for two or three days, during which the parts adjoining the rowel swell, and at the end of the time there appears a discharge of a yellowish matter, which gradually becomes thicker and whiter. In three days at farthest the part must be examined, and the plug removed from the central hole, to allow the matter to flow out. The rowel is now complete, and may be continued as long as shall be found necessary. The action of the rowel is easily explained; the leather introduced excites a degree of inflammation between the skin and the flesh, and no means being taken to check this, it goes on like most other inflammations of fleshy parts, to suppuration. Thus a discharge is produced from the part, which is found to have considerable effect in checking inflammation of some more important organ near which the rowel has been inserted.

Rowels may be placed in most of the fleshy parts of the body; but they are most commonly inserted in the belly, the breast, the inside of the thighs, the outside of the shoulders, and the hips. They are sometimes placed between the jaw-bones, below the tongue; but this is very improper, as a good suppuration can seldom be brought on in this place.

It is sometimes found necessary to make several rowels at the same time; but they should always be placed, as nearly as possible, to the seat of the affection which they are intended to relieve.

Besides dangerous inflammations, rowels are found serviceable in large swellings of the hind-legs, in obstinate cases of grease, and in strains of the shoulder.

Where there is considerable debility, the insertion of a rowel would be very injudicious, as it would not suppurate kindly, and as the discharge produced would tend still farther to increase the debility. The discharge in these cases is usually thin and ichorous; sometimes they are perfectly dry, and not unfrequently a mortification is produced.

Setons are particularly useful for the purpose of gradually draining off matter from large abscesses or suppurating tumours. The mode of introducing them is described in page 76.

75. The Stable.

The horse, in a state of nature, is constantly exposed to the open air; and when domesticated and confined in a stable, he must necessarily experience some derangement in the natural functions of his body. Swelled legs, grease, and inflammatory attacks on the eyes, are generally the result of dry feeding and confinement in a stall. The situation and construction of stables is therefore of the greatest importance; as without a particular attention to these objects, it will be found impossible to preserve the health of this valuable animal.

Stables should be built on a dry soil, that is somewhat elevated; or, at least, they must not be kept in a hollow, or in the neighbourhood of boggy or marshy land. The damp cold air, arising from moist, low situations, is extremely prejudicial to the health of all animals, particularly horses, and, as we shall see hereafter, to sheep. It renders them subject to colds, rheumatism, and not unfrequently to fever. Stables built in these situations are therefore always dangerous; and more particularly so, when the animals return to them after having being heated by violent exercise or labour.

Stables should be roomy in proportion to the number of horses that it is proposed they should contain. Perhaps no stable should be made to hold more than five or six horses, as many inconveniences arise from keeping too many of these animals in the same apartment. Not only is the air thereby much more vitiated, but the rest and sleep, so necessary to repair the fatigues of the day, are thus prevented or disturbed. Some horses will not sleep, or even lie down, if not perfectly at their ease; and hence, in large stables, that are made to contain a dozen or more horses, as is often the case in livery stables and such as are attached to large inns, the frequent entrance of grooms, ostlers, and other persons with lights, into the stable, and even the restless noise of some of the horses, who are more watchful, or have been less fatigued than others, must be a great disturbance to these latter. Where necessity requires a long range of stables, it is better to have them divided, by thick partition walls, into separate apartments, each made to contain not more than six horses. The additional expense of this would be trifling, compared to the greater ease and comfort of the animal.

It is usual in large stables, for the sake of keeping more horses conveniently under the same roof, to make them double-headed, as it is termed; that is, to have a range of stalls along each wall, with a space between, for persons to pass to and fro. Stables of this kind are very improper; the space between the two ranges is often so narrow, that when the opposite stalls are occupied at the same time, the horses can reach each other with their hind-feet, especially when standing, as they often do, at the full length of their halter. Hence, in the contests that often arise between quarrelsome or mettlesome horses, very severe bruises, and even lameness, are not unusually the consequences of the animals being within each others reach. The danger that threatens passengers in these narrow spaces is also not small. A person is much exposed to danger when obliged to pass between two rows of horses, kicking and wincing under the curry-combs, where the intermediate space does not exceed three or four feet. If double-headed stables must be used, the space between the ranges of stalls should be at least eight feet.

The stall should be six feet wide, to allow a horse of fifteen hands height room to turn round in, especially as the back-bone of a horse possesses but little flexibility. The length of the stall should be nine feet, and the height should be such as to hinder them from smelling or biting each other. It is a bad and dangerous mode to divide the stalls only by a bale, or circular wooden bar, suspended by a chain both at the manger and at the post.

The custom of paving the stall with a descent backwards is productive of many serious inconveniences. This is done for the purpose of letting the urine run off from the litter. But the pain of standing constantly in an up-hill position is very great; and the horse always endeavours to find a level standing, either by placing himself across the stall, or by retreating as far back as his halter will allow. He is also obliged to balance himself by standing with his fore-legs farther under his body, which gives him a bad habit of going, and also by removing the pressure from the heels to the toes, tends to increase that contraction to which the feet, in the stable, are always more or less disposed. The hind-legs too are always more inclined to swell from this circumstance; and the horse, when lying down, frequently slips backwards in such a manner, that, being at the utmost length of his halter, he is unable to rise on his legs, owing to the confinement of his head and neck.

The ground surface of the stall, therefore, should be perfectly level both before and behind; and in order to carry off the urine, a drain may be made under the surface, with a grate about six inches square in the centre, and which part of the surface should be rather lower than the rest.

The best flooring for stalls is strong oaken planks, well-seasoned, and laid across the stall with their extremities below the partitions, and having their joining edges accurately adapted to each other. Such a flooring is more elastic, and preserves a more equal temperature than pavement; besides, although a little more expensive, it is not so slippery, or so apt to be broken with the pawing and stamping of the animal, as brick or stone.

The manger should be so contrived as to slide into the wall, so that when the horse is not feeding, he may have nothing to bite at whilst he is being cleaned, which habit often teaches them to become crib-biters. The rack should be made of cast iron, in which case no splinters can rise to wound the animal's lips. They should be perpendicular with the wall, because by hanging over hay seeds sometimes get into the horse's eyes, and produce great inconvenience. The bars should not be above four or five inches asunder, that the hay may not fall out and be wasted. The door of the stable should be at least seven feet high, in which case the horse will be less liable to strike his head against it in passing through it.

The roof of stables should be a good height, and the walls should be of stone or brick, but by no means of wood, and they should only be covered with plaster. The temperature of the air in buildings of stone or brick is much more equable than in those built of wood, and they also are better adapted for resisting the spreading of fire.

It is a common practice to build stables of two stories, the upper story forming a loft for the purpose of keeping the horse's hay and corn; and in gentlemen's stables, where the building is sufficiently large, it is usual to have apartments on the upper story for the grooms and other servants employed about the stables to sleep in.

The apartment employed as a hay-loft has usually a vacancy in that part of the flooring which is immediately over the rack, for the purpose of more conveniently supplying the horses with hay. This mode of building stables has its convenience in an economical point of view, and these apartments in the upper story add much to the shewy appearance of the building; but there are several material objections to this construction.

Lofts or chambers above the stable render the latter too close and warm, and are more exposed to accidents from fire, while the foul and heated air that arises from the stalls tends to mildew the hay and corn: besides, the dust rising from the shaking of the hay into the rack is prejudicial to the lungs of the horses.

Where from taste or convenience stables are built of two stories, the flooring above the stable should be made as close as possible, and covered with thin bricks or stone; and the entrance to the upper lofts or apartments should be from without, and by no means by a trap door and ladder within the stable. Stables should always be as much as possible detached from other buildings, and the dunghill should be at some distance from the door or window of the building.

The generality of stables are by much too close and warm; not a chink is left for the free admission of air; the door, and windows (if there are any), are made so close, as perfectly to exclude the air; or, if this is not the case, the crevices are frequently stopped with hay, under the idea that the horses cannot be kept too warm. This is a most absurd and mistaken notion; and is contradicted both by reason and daily experience. When we consider that horses in a state of nature, or even in their usual pastures, are perpetually exposed to the open air, and that, under these circumstances, they are more vigorous and active than under the most attentive care of their masters, we must be convinced of the impropriety of keeping them for hours together in the foul and heated atmosphere of the ordinary close stables. Whoever enters one of these stables when the door is first opened in the morning, after it has been closely shut up all night, will be able to judge from his own sensations, whether such an atmosphere can be wholesome to the animals that breathe it. Besides the great heat of the stable, which if many horses have been shut up in it all night is nearly intolerable, the air will be found highly impure, from the continual respiration of so many animals, and the steams arising from the exhalations of their bodies, which have probably sweated profusely from having been so long confined in an atmosphere so foul and heated. Add to this the impregnation of the air by the effluvia arising from the litter, &c.; and it is not easy to conceive a more unhealthy situation for an animal, who, to perform the offices required of him with activity and vigour, should be in the full possession of all his strength.

In order to preserve the health of horses, it is absolutely necessary that the stable be properly ventilated. This may be easily effected by letting down the upper sash of the windows a little, and by carrying a tube of six inches diameter from the centre of the ceiling through the roof. The importance of ventilation is very clearly and simply explained by a modern writer in the following words:

'The effluvia of animal bodies, like all the other excretions, is constantly running into a putrefactive state, and this must point out very forcibly the necessity of a proper degree of ventilation in stables, especially when it is considered that the dung and urine add greatly to the evil. But the desire of giving a horse a fine coat in winter induces those who have the care of him to keep the stable as hot as possible, by excluding to the utmost of their power the external air. As far as appearance goes, this custom certainly has the desired effect; but the consequences are, that the animal is rendered more delicate, and more liable to catch cold whenever he happens to stand in a colder situation than that to which he is accustomed. Stables that are kept hot and not sufficiently ventilated are always extremely damp. This arises from the breath and the vapour of the horse's body becoming condensed on the surface of the walls, and running down them in a liquid state.

'When this moisture has remained for a certain length of time, it acquires an unpleasant and sickly smell, and which must be peculiarly offensive to an animal destined in a state of nature to be surrounded with pure and wholesome air. In a state of health a certain evaporation from the surface of the body is constantly going on. This is called the insensible perspiration. This vapour is absorbed by the surrounding atmosphere, and the quickness or slowness of the absorption will be in proportion to the change which the air undergoes by circulation. Thus if the horse be exposed to the open air, the evaporation is much more rapid than when he is confined in the stable. This evaporation unloads the vessels of the skin, invigorates the circulation of the blood, and gives a general tone of health and spirit to the whole animal machine. Upon this ground, therefore, the necessity of attending to the proper means of ventilation, in the construction of the stable, must be sufficiently evident.'

It is absurd to expect a horse should prove vigorous and healthy that is condemned to live in a close stable, and to breathe a contaminated atmosphere. This inconvenience will destroy even the strongest constitution of a horse; and it is probable that the constant breathing of a hot foul air is the principal cause of broken-wind. It likewise renders the horse liable to fever, languor, and loss of appetite. It exposes him to all those external complaints that arise from obstructed perspiration, as rheumatism, tumours in the glands, farcy, grease, and eruptions of the skin. But the danger is much greater when the perspirable matter is thrown upon the lungs, and produces coughs, inflammations, and consumptions; or, by affecting the brain, induces the staggers and epilepsy.

The value of fresh air is now better understood than formerly. It is computed that a man renders a gallon of air unfit for respiration after he has breathed in it for the space of one minute; and Dr. Hales found that he could not live half a minute without uneasiness in seventy-four cubical inches of atmospheric air: how large a quantity then of air would be rendered unfit for respiration in the same time by a horse, whose lungs are considerably larger than a man's? But a hot, damp, moist air is not only extremely pernicious to the health of horses, but destructive to the furniture of every kind.

The free admission of light into stables is nearly of as much consequence as that of air. It is a very erroneous opinion which is maintained by some grooms and stable-keepers, that horses feed best in the dark. These animals naturally love the light, and are much more cheerful and spirited in stables where this is freely admitted, that in the dark and dismal hovels that we sometimes find attached to inns and farm-houses. There is one bad consequence that follows keeping horses in a dark stable, which does not appear to be sufficiently attended to. By being kept so long excluded from the light, the horses' eyes become weak, and unable to support the full glare of open day. The pupils being so long habituated to an unusual degree of dilatation, do not readily contract when the animal is brought out into the open air; hence his eyes being offended with the strong light, to which he is so little accustomed, are perpetually winking and watering: the horse appears as if half blind, and starts and stumbles at almost every step.

The stable should, therefore, be furnished with glazed windows, in number proportioned to the size of the building. In general, no stables should have fewer than two windows; and they should be placed in such a situation, as that the horses may not receive the rays of light too directly on their eyes. Where the stable has only one range of stalls, this point can be easily effected, and in such stables, the windows should always be placed at the back of the horses. But in double stables it is not easy to place the windows so as not to incommode some of the horses, since, on whichever side of the stable they are made, the horses on that side are exposed to the full glare of the light; another argument against double stables. The windows should by all means be sashed, and should be made to draw down from the top, as well as to be thrown up from below. They should not be made too small, and should be carried up as near the ceiling of the stables as is compatible with the strength and symmetry of the building.

76. Cleanliness.

No damp or wet litter should on any account be permitted to lie in the stable. Cleanliness is essential to health. The stalls should therefore be carefully cleaned out every morning, and the moist litter removed to a distance from the stable. The sharpness of the volatile salts, arising from the urine which is absorbed by the straw, is extremely hurtful to the eyes of the horse; while damp litter softens the hoof, swells the legs, and produces many other inconveniences.

77. Food.

When the horse ranges at liberty in the fields, he chooses his food and seldom errs; but when shut up in a stable, he is exposed to great danger, both from the *quantity* and the *quality* of the food given to him. In this state he has to wait the convenience of the keeper; and being sometimes obliged to fast long, the horse eats so voraciously as to overload his stomach and occasion great danger.

Mr. Clark, of Edinburgh, mentions two instances of horses having died from excessive eating. 'A young draught-horse was fed in the morning with too great a quantity of barley mixed with pease, and had been allowed to drink water immediately after. After having travelled a few miles he was observed, about the middle of the day, to be very uneasy, frequently attempting to lie down. As soon as he was unharnessed, he laid down, and rolled about, frequently lying on his back, starting up suddenly, and turning his head towards his belly. He continued in this manner, in great agony, till towards the next morning, when he died. Upon opening his body, the stomach was found burst, the barley and pease mostly entire, only greatly swelled, and the whole contents of the stomach, which were very considerable, spread through the abdomen.

'The other case was that of a horse that had been fed with too great a quantity of oats and barley, and had been allowed to drink water freely afterwards. He was seized with griping pains, so that he frequently lay down, and, apparently, in the greatest torture. He died on the next day. Upon opening his body, the stomach was found distended to a most enormous size, but was not burst. Its coats were stretched so very thin, from the great distention it had undergone, that its cohesion was almost destroyed, and it had more the appearance of a coat of mucus and of slime than the stomach. The oats and barley were, for the most part, entire as they were swallowed, only greatly swelled from the moisture they had imbibed.

These, and many other instances that might be enumerated, shew the necessity of preventing a horse from eating too much at a time. His food should be given in small quantities, and often repeated.

It is, however, equally necessary to avoid the opposite extreme, for a deficiency of food soon brings horses into a state of debility and disease. A starved horse becomes weak and languid, and the circulation of his blood faint and feeble. Dropsical swellings appear in different parts of the body, and especially in the legs, and the horse sinks under a complication of diseases, which are the result of an impoverished state of the blood and juices.

There is a great difference in the *quality* of the food given to this animal, and which ought to be attended to in order to preserve his health.

Grass is the most natural food for horses; but it must be admitted that they are not so capable of enduring great labour and fatigue whilst fed with it, as they are when kept in the stable upon hay and oats. This arises from the great moisture and succulence of the grass increasing the animal fluids, and producing a degree of fatness which adds to the weight of the horse without increasing his strength. It also diminishes the powers of free respiration, by loading the vessels; and in this state the animal may, with great propriety, be compared to a fat alderman when matched in a race with a lean active rustic. It is, however, of the most essential benefit to turn horses to grass occasionally, not only in regard to a change of diet, but also to a change of air. The spring-grass acts as a natural purgative, and carries off various unhealthy concretions, that sometimes collect in the intestines of horses that are long confined to dry hard food. It also facilitates the evacuation of worms, particularly the ascarides, and it renovates, in a striking degree, the whole mass of fluids of the body. It is certain that nothing so soon re-establishes a lean over-worked horse as grass; a change which sometimes cannot be effected in the stable, even with the best hay and oats, and the most attentive grooming.

Hay is the principal fodder used for horses in this country. Its smell and taste is sweet, and horses are very fond of it, especially of mow burnt hay, which is of a browner colour than the ordinary kinds of hay. The sugar which it contains produces thirst, and occasions them to drink much, which tends to fatten them sooner than other food. New hay is very indigestible, and productive of very serious disorders: it ought never to be given for food. Very old hay is also to be rejected, for after the second year it loses its nutritive and digestible qualities. Hay is never better than when it is about one year old.

Rye-grass hay is harder, coarser, and not near so nutritive as the meadow hay. But whatever may be the nature of the hay, it is of the utmost consequence that it should be sweet and wholesome, and not mouldy, as bad hay lays the foundation for disease.

It is customary to put hay in the rack at night: and in cases where the horse labours much through the day, it may not be improper, as at night he enjoys leisure to masticate his food properly; but it cannot be necessary to give hay at night to animals which work little, and which spend most of the day in the stable.

Oats are the general food of horses in this country. They are usually given three times a day, with a small mixture of beans, especially for carriage and post horses. But such heating food can be given safely only to such animals as undergo strong exercise. The constant feeding with oats is apt to make horses costive: it is therefore a good practice to give them bran-mashes once or twice a week.

Good oats, whether white or black, are known by their weight and thinness of husk, and being short. They should be some months old before they are used, as new oats are apt to swell the belly and produce gripes. Oats should be carefully sifted clean from dust and the dung of mice.

It is recommended to bruise the corn in a mill before giving it to the horse, as whole corn being but imperfectly masticated, eludes the digestive powers of the animal, and is ejected from his body crude and unbroken. This is particularly the case with brood mares and young stock, the bellies of which are full of slippery grass; such should have the corn ground and made into mashes.

New beans ought to be dried in a kiln before they are given to horses. Old beans should be split, and given either with bran or chaff. It is a good method to boil the beans, or else, by wetting them occasionally, to excite that degree of fermentation sufficient to make them sprout. They may be used with advantage in cases where the horse labours severely. Beans contain more solid nourishment than oats, but of a less salubrious nature.

Carrots are said to amend the wind, purify and sweeten the blood, and to replenish after the wastings occasioned by disease or inordinate labour. Mr. J. Lawson recommends them highly. They are either given in spring or autumn to high-fed horses, as a change of diet, at the rate of one feed per day in the lieu of a feed of corn, or as full subsistence to others. They are to be washed clean, and, if large, cut into flat and sizeable pieces. The quantity of carrots for a feed is from half a peck to a peck.

Barley is the common food for horses in Arabia, Spain, Portugal, and some parts of France. It is a good wholesome food, though a strong unfounded prejudice exists against its use in England. When mixed with straw, nothing is better calculated to keep horses in spirit and wind. Barley at first has a tendency to purge horses.

Wheat is not proper for horses; for although its high price precludes its use, yet its cohesive indigestible properties render it very dangerous food.

It is indisputably a good practice to mix chopped straw or hay with the grain. For as lord Pembroke justly remarks, speaking of this practice: 'Every grain goes to nourishment, none is to be found in the dung, and three feeds of it go farther than four that are given in the common way. But wheaten straw and a little hay sometimes mixed with it is excellent food. To a quarter of oats the same quantity of chopped straw may be added,'

Here it may not be improper to mention again that most foolish and dangerous custom of feeding horses in the same proportion, whether they work or not. From this error many disorders proceed; for no horse which is not well and constantly exercised, can continue long in health if full fed.

78. DRINK.

There is seldom proper attention paid to the quality of the water which horses drink, although it be an object of the greatest importance. Water becomes the vehicle of all nourishment to the animal; and as it partakes of the quality of those bodies through which it passes, we cannot be too particular about its choice. It is the best diluter of fluids in the stomach, and it is essential to the healthiness of the fluids of the body. The following sensible observations on the subject are from the pen of Mr. R. Lawrence.

'It has frequently been observed, and not easily accounted for, that horses do not thrive on changing from one part of the country to another, although their treatment in every respect, be the same, difference of water excepted. This perhaps may, in a great measure, be owing to the quality of the water they drink, and which may be possessed of different qualities from that to which they had before been accustomed.

'This is particularly observed in those places where the stable-yards are supplied from pit-wells, some of which are very deep, and the water very hard, which occasions that chillness, trembling, and skaking, which is frequently observed in horses, when they drink it immediately after it is new pumped, and which causes their coats to stare and stand on end for a considerable time, and sometimes they are griped and seem considerably out of order. Spring-water is liable to partake of all the metaline or mineral strata through which it passes. Hence it becomes noxious or salutary according to the nature of those substances with which it has been in contact. River-water has, likewise, its different qualities, from the various soils through which it travels; but, in general, it is much softer than water that runs under ground, and therefore is much fitter for use. Well or pit-water is subject to all the inconveniences of spring-water, with this additional circumstance, that it is generally hard, and, by stagnating long in the well, it may there take up from the bed it lies upon such particles as may render it unwholesome; therefore, the goodness of all well or pit water is to be doubted, and particularly that which is taken from very deep wells. Pond-water (under which head may be included all stagnant waters which generally proceed from rain), if lying on a clean or clayey bottom, and fresh, answers very well for cattle of all kinds; but in warm weather it is apt to corrupt and ferment, which renders it unwholesome, and the most uncleanly and disagreeable of any.

'To correct the hardness of pit-water, and render it more salutary for horses to drink, it should be pumped into a large trough, and exposed to the open air for some time before it is used, or if a cart-load or two of clay or chalk were thrown into the well, it would greatly improve the water. It has likewise been found that breaking down a piece of clay, about the size of an apple, in a pailful of hard water before it is given to a horse to drink, morning and evening, has produced a considerable and favourable change on the coats of horses.

'Indeed, it will be found where horses are obliged to drink hard water, they are for the most part, rough haired, and at the same time have a great deal of dusty matter at the roots of their coat, even though they are well curried and brushed every day, which plainly shows that there is some obstruction in the pores of the skin, which prevents the natural perspiration, and of course that shining appearance of the hair which is observable in all horses that perspire freely. Hence it would appear that this cutaneous obstruction proceeds from the constant drinking of water of a bad quality.'

Very hard water may be improved by throwing a quantity of clay into it; and impure stagnant water may be improved by throwing into the well a few shovelfuls of burnt lime.

Horses may be permitted to wash their mouths and throats by a few swallows of water after any severe exercise; but while heated, they should never be allowed to drink freely of cold water, nor before performing any active exercise.

79. Exercise.

In order to preserve the health of horses, it is necessary that they be regularly exercised. Without exercise the circulation of the blood becomes slow and languid, the sheath and legs swell, glandular obstructions are formed, and many obstinate disorders take place; whereas health, firmness, and strength, are greatly promoted by proper exercise.

The transition from idleness to exercise, or from exercise to idleness, should be gradual, or much mischief may ensue. Where possible the periods of exercise should also be so regulated as not to interfere with the usual course of feeding and cleaning. In all cases where it can be avoided, it is improper to take out horses to exercise in wet or stormy weather. Fat horses that have become delicate from long confinement, under such circumstances, often die suddenly, or are attacked by the disease called the *molten grease.*

Horses that are very fat, and have been kept idle for some time, should be prepared for work or exercise by undergoing a regular course of purging medicine, and a good deal of walking exercise. While enforcing the utility of exercise, it is scarcely necessary to observe, that violent and long continued exercise is, on the other hand, attended with danger.

80. CLOTHING.

Stables ought to be kept clean, dry, well ventilated and moderately warm; in which case body clothes will not be necessary. They are indeed highly improper, as they keep the body in a constant state of relaxation, and render the animal more liable to catch cold.

'Would it not appear ridiculous and inconsistent,' says a sensible writer on this subject, 'for a man to wear a great coat in a warm room, and to throw it off when he went out in the fresh air. Yet equally absurd is the practice just alluded to of clothing horses in the stable. One would imagine that the health of a horse was an object of the first consideration, and certainly of more importance than the fineness of his coat. But, in almost all stables, the latter is considered as of the most consequence, and the health of the animal is sacrificed accordingly to this trifling object.'

Clothing post or coach-horses, which are liable to experience great changes, and to stand out in the open air, is particularly objectionable. As to the practice of covering a hunter or race-horse with body-clothes and a hood, and in this state of sweating him excessively, nothing can be more absurd and hurtful. The perspirable matter being confined by the clothes, the pores are clogged up, the vapour becomes rank and unwholesome, and the poor animal naturally falls into a state of weakness and exhaustion. The mail coach horses are generally kept in high condition; yet they are not only not clothed, but frequently exposed to bad weather and other evils. When a horse is put into a stable in a state of excessive perspiration, it may not be improper to cover him with a cloth, in order that he may cool gradually. The other cases wherein clothing may be properly used are mentioned under the head of the diseases where the precaution is recommended.

81. DIFFERENT BREEDS.

The horse is produced in most parts of the world. In the wild and extensive plains of Africa and Arabia, he ranges without control in a state of entire freedom. In those immense tracts, the wild horses may be seen feeding together, in droves of four or five hundred; one of them always acting as centinel, to give notice of approaching danger. This he does by a kind of snorting noise, upon which they all fly off with astonishing rapidity. The wild horses of Arabia are esteemed the most beautiful in the world; they are of a brown colour, their mane and tail of black tufted hair, very short; they are smaller than the tame ones, are very active, and of great swiftness. The most usual method of taking them is by snares or pits formed in the sand. It is probable there were once wild horses in Europe, which have long since been brought under subjection. Those found in America were originally of the Spanish breed, sent thither upon its first discovery, which have since become wild, and spread themselves over various parts of that vast continent. They are generally small, not exceeding fourteen hands high; with thick heads and clumsy joints; their ears and necks are longer than those of the English horses. They are easily tamed; and if by accident they should regain their liberty, they seldom become wild again, but know their master, and may be easily caught by him.

The difference that exists in the form and qualities of this noble animal is to be attributed chiefly to peculiarity of soil and climate. The extremes of heat and cold are alike adverse to the luxuriant production of herbage and the growth of animal bodies. Hence, perhaps, the contrast between the small pony produced in the bleak isles of Shetland, and the huge horse bred in the more temperate and fertile plains of Flanders. Some have supposed that the Welch pony was originally the only breed peculiar to great Britain, and which has been improved by intermixtures with foreign horses. However this may be, it is certain that the English blood-horse is superior to any other, not only in Europe, but in the whole world.

The superior excellence of the English blood-horse is to be ascribed to the care and attention bestowed upon breeding, especially for the turf; and which system has been zealously pursued for a great number of years. Some good judges are, however, of opinion that the breed is deteriorating, as the present practice of running horses so young has caused a preference to be given to a slighter race than formerly. They have strongly recommended a more frequent recurrence to a first cross with genuine Arabians; but the expence and difficulty of importing an Arabian horse is very great. Few that are introduced into this country as Arabians have any claim to that title. The earl of Elgin, whilst in Turkey, offered a poor native 500*l.* for an Arabian mare which he rode, but was refused. Perhaps an association of gentlemen could best effect the important object of obtaining a selection of the most valuable Arabian horses.

82. *The Arabian Horse.*

The Arabian horses are divided into two classes, the nobles and the plebians: the latter are crossed in a variety of different manners, and form the most numerous species. The former has been preserved uncontaminated and without alteration for an amazing length of time. The Arabs have no tables of genealogy to prove their descent, yet they are sure of their legitimacy; for a mare is never covered, writes Niebuhr, unless in the presence of witnesses, who must be Arabians. This people do not always indeed stick at perjury; but in a case of such serious importance, they are careful to deal conscientiously. There is no instance of false testimony given in respect to the descent of a horse. Every Arabian is persuaded that himself and his whole family would be ruined if he should prevaricate in giving his oath in an affair of such consequence. The *kochlani* horses are the most highly esteemed, and consequently the dearest. They are reserved solely for riding, and are said to shew uncommon courage against an enemy. It is even asserted, that when a horse of this race finds himself wounded, and unable to bear his rider much longer, he retires from the fray, and conveys him to a place of security. If the rider falls upon the ground, his horse remains beside him, and neighs till assistance be brought. The *kochlani* horses are neither large nor handsome, but amazingly swift. It is not for their figure, but for their velocity and other good qualities, that the Arabians esteem them. The English, continues Niebuhr, sometimes purchase these horses at the price of two hundred or two hundred and fifty pounds sterling each.

The horses of the Bedouins or wandering Arabs preserve inconceivable vigour and spirit, amidst a continual succession of fatigue and abstinence.—Every one of these Arabs has his mare, and his tent serves him for a stable. The mare and her foal, the husband and his wife and children, sleep together promiscuously: the infants often lie on the body or on the neck of the mare or foal without receiving any injury from these animals, which seem afraid to move lest they should hurt the children. An Arab never beats his mare, but treats her gently, and talks and reasons with her; and she is so extremely attentive to the wishes of her rider, that whenever she perceives the approach of his heel to her side, she instantly sets off with incredible swiftness.

83. *The Egyptian Horse.*

The Egyptian horses are descended from the Arabian, and are remarkable for size and beauty. They are more elegant than the Arabian coursers, but inferior in strength and swiftness. The horse of Egypt however, compensates for the deficiency by his own appropriate attractions; a majestic stature, the head well proportioned, eyes full of fire, wide nostrils, a fine forehead, the crupper round and plump, legs slender and tendinous, a light and sure step, proud and noble attributes, in short, an admirable proportion between all his parts; so that if the Arabian horse renders more essential services, the Egyptian will be more gratifying to the vanity of his owner.

84. *The Persian Horse.*

The Persian horses are large and bony. They shew much blood, and attain a larger size than the Arabian horses. Sir George Ousely has lately exhibited some good specimens of this breed.

85. *The Turkish Horse.*

The Turkish horse is a strong, sprightly little animal; and, when crossed with large English half-bred mares, is likely to produce a very serviceable stock, either for the coach or the saddle.

86. *The Hanoverian Horse.*

'The Hanoverian horse,' says a late writer, 'is of a good size, with rather high action, and in general grand in his forehead, though somewhat light in his ribs. When crossed with English blood-mares, he gets good hackneys and excellent coach-horses.—The regiment of the Scotch Greys some years ago had a Hanoverian stallion which travelled with them to their different quarters round the country. Several farmer's mares were sent to this horse whilst the regiment was stationed in Warwickshire; and although he was by no means a superior horse in his shape or appearance, still he got some very useful well-formed stock, and with good and safe action.'

87. *The Russian Horse.*

The Russian horses, especially those upon which the Cossacks are mounted, are very strong, both in make and constitution; but they have no pretensions to beauty, having rather coarse bony heads, with straight necks, and being what is called ragged hipped, and cat-hammed, that is to say, with their hocks standing slose together. But they have clean flat legs, with little hair at their heels, and certainly have better blood in them than their external appearance testifies.

88. *The Spanish Horse.*

The Spanish horse is the worst of his species in the creation. He has neither strength, speed, nor durability. His form is the very reverse of excellence in every point. A long head, narrow front, small eyes, a large bony and prominent nose, small nostrils, thick leather lips, narrow jaws, thick throat, heavy and fleshy neck, upright and thick shoulders, small chest, short and thin arm, long and slight shank, small joints, long sloping pasterns and narrow hoofs, flat ribs, hollow back, short quarters, small round thighs, weak hocks, cat hammed, round croupe, and a coarse bushy tail, appearing as if it were stuck into the rump. And in regard to his action, he raises his fore-leg high in a perpendicular direction without advancing his shoulder, throwing his feet outwards every time they are suspended in the air.

89. *The French Horse.*

The common breed of horses in France is a very indifferent kind of animal; but much attention has lately been paid to their improvement, and many of the cavalry regiments are now well mounted. The best horses are bred in Normandy.

90. *The German Horse.*

The German horses are very similar to the Hanoverian; but they are not remarkable either for speed or bottom.

91. *The English Horse.*

The English blood-horses, as before observed, are the most celebrated in Europe. This excellence is not so much owing to the salubrity of our climate and our pasturages, as to the close attention and judicious observations of our most eminent breeders. An able French writer on this subject remarks, that 'The crossing of the Arabian and other Asiatic horses with the English breed, and the farther crossing of their produce with each other, has naturally produced a division into five classes, which are very distinct and have been well preserved.

'The first is the race-horse, proceeding directly from either an Arabian or Barb with an English mare that has been bred by a similar cross. This is what the English call their highest blood.

'The second is the hunter, arising from a blood-horse and a half-bred mare. This class is very numerous—they are stronger than the first, and capable of undergoing great fatigue.

'The third is the result of a cross of the hunter with mares of a more common description: these constitute the coach-horse. It is from these two classes that the English export so many throughout Europe, and particularly to France.

'The fourth is the draught-horse, the produce of the former with the strongest mares of the country. There are some of this breed of the greatest size, and in their form and character not unlike the horses which are seen cast in bronze.

'The fifth has no particular character, being the result of accidental crossing among the rest. Still, notwithstanding this mixture, the influence of the Arabian blood may be traced in some degree even among the most common sort.

'The English have procured Arabian horses, and have devoted the greatest attention and care to their system of breeding, particularly by publishing the genealogy of those which they considered as their best produce. They have well understood the importance of this publication, for, by these means, they have been able to have recourse to stallions and mares that approached the nearest to the original blood, for the purpose of breeding, and thereby to preserve the breed from degenerating.

'Such is the state of breeding-horses in England, where they pretend that they have no occasion to return to Arabian horses, an opinion which appears to be founded rather on the estimation in which the English hold their own breed, or the fictitious value which they wish to put upon them, than upon fact.

'The race-horse is, in England, a grand object of luxury and expense. Many rich families have been ruined by the enormous wagers which take place at their races, as well as the expence of keeping the horses. It will hardly be believed that they have carried their system to such an excess as to cover *whole fields with sand*, in order to produce a more delicate herbage, and more assimilated to that which grows in Arabia, from whence the blood of these race-horses originated, from the apprehension that the coarser sort of grass would affect their wind; and that five or six grooms, at six guineas per month each, are employed to take care of one horse; and that they warm the water for the horse to drink in winter, with other ridiculous customs, unknown even to the Arabs.'

This general classification of the most prevalent breeds in England appears to be tolerably correct, though it is a subject that does not admit of much precision. The following brief remarks on the most distinguished breeds of English horses will be found useful.

92. *The Race-horse.*

The English race-horse is indisputably the strongest animal of his weight in the creation. This peculiar excellence does not depend on his bulk, but upon a certain form and disposition of his limbs, as may be readily perceived in his full and close loins, low hips and muscular haunches and thighs. From this kind of conformation he is enabled to support a wonderful continuance of violent exertion, or what is called, in the language of the turf, *bottom*. They are also superior to the Arabian, the Barb, or the Persian for swiftness. The famous horse Childers could move eighty-two feet and a half in a second, or nearly a mile in a minute; he has run round the course at Newmarket, which is little less than four miles in six minutes and forty seconds. So important is this breed in England, that wagers to the amount of nearly two hundred thousand pounds were betted on the event of a race between *Hambletonian* and *Diamond*. In another division of this work we will notice several curious racing anecdotes.

93. *The Hunter.*

The hunter forms a happy combination of the race-horse with others of inferior swiftness, but possessing strength, vigour, and activity, and is, without doubt, a very useful breed.

The whole shape of a horse intended for a hunter should be this: The ears should be small, open, and pricked; or though they be somewhat long, yet if they stand up erect and bold like those of a fox, it is a sign of toughness or hardiness. The forehead should be long and broad, not flat, or, as it is usually termed, *mare-faced*, but rising in the middle like that of a hare; the feather should be placed above the eye, the contrary being thought by some to threaten blindness. The eyes should be full, large, and bright; the nostrils not only large, but looking red and fresh within; for an open and fresh nostril is always esteemed a sign of a good wind. The mouth should be large, deep in the wicks, and hairy. The wind-pipe should be large, and appear straight when he bridles his head; for if, on the contrary, it bends like a bow on his bridling, it is not formed for a free passage of the breath. This defect in a horse is expressed among the dealers by the phrase *cock-throppled.* The head should be so set on to the neck, that a space may be felt between the neck and the chine; when there is no such space, the horse is said to be bull-necked; and this is not only a blemish in the beauty of the horse, but it also occasions his wind not to be so good. The crest should be strong, firm, and well risen; the neck should be straight and firm, not loose and pliant; the breast should be strong and broad, the ribs round like a barrel, the fillets large, the buttocks rather oval than broad, the legs clean, flat, and straight; and, finally, the mane and tail ought to be long and thin, not short and bushy, the last being counted a mark of dulness. When a hunter is thus chosen, and has been taught such obedience, that he will readily answer to the rider's signals both of the bridle and hand, the voice, the calf of the leg, and the spurs; that he knows how to make his way forward, and has gained a true temper of mouth, and a right placing of his head, and has learned to stop and to turn readily, if his age be sufficiently advanced, he is ready for the field.

94. *The Road-horse.*

A good English saddle or road-horse is one of the most useful animals in Europe, though the breed has been lamentably neglected. Farmers are more inclined to breed hunters than hackneys, on account of their obtaining a higher price for the produce. They therefore put their mares to some thorough-bred ill-formed stallion, which possesses no recommendation but a pedigree, and perhaps the winning of some sweepstakes. 'Many of these,' observes Mr. R. Lawrence, 'are very badly formed in their legs, and shew evident signs of bad action by the scars on their fetlock joints, occasioned by striking one leg against another.

The comparative low price given for good road-horses has, no doubt, contributed to discourage improvements in this invaluable breed. It, however, is an object of great national importance, as it affects both internal intercourse and external defence. The under-sized weak horses that are admitted into our regiments of light dragoons rendered them unable, at the battle of Waterloo, to withstand the charge of the French cavalry.

Road-horses are best produced by a half-bred stallion, rather tall, with a comely and outswelling forehead. His eye should be bright and sparkling, his neck well turned, and issuing high out of his breast, with deep shoulders, broad breast, long muscular, arm, and short shank. His back should be short and ribbed home, his girth large, and his belly round. His hind quarters should be bold and muscular, and not too long in the thigh and leg. He should go light, and his knee should be well elevated and advanced during the trot. The progeny of such a horse must be excellently adapted either for the road, the saddle, or the purposes of war.

95. *The Draught-horse.*

Great improvements have been made in this useful breed of horses. The great, unweildy black horse, with a large sluggish head, a long fore-end, long back, and long thick hairy legs, has nearly disappeared, and is now succeeded by an animal which unites the advantages of strength and docility with those of form, activity, and vigour. Farmers are now convinced that strength and activity, rather than height and weight, are the more essential properties of draught-horses.

The draught-horse ought to have a large broad head, because horses of this shaped head are less subject than others to diseases of the eyes. The ears should be small, straight, and upright: the nostrils large and open, that he may breathe with the more freedom. A horse with a full and bold eye always promises well. On the other hand, a sunk eye and an elevated brow are bad signs. The horse is esteemed fittest for this purpose also, that has a large and round buttock, which neither sinks down nor cuts. He must have a firm and strong tail, and the dock must be thick and well furnished with hair, and placed neither very high nor very low. The legs should be rather flat and broad than round: the roundness of the leg being a fault in a horse destined to labour that will soon ruin him. As to the hinder legs, the thighs should be fleshy and long, and the whole muscle which shews itself on the outside of the thigh should be large and very thick. No country can bring a parallel to the size and strength of our horses destined for the draught. In London there are instances of single horses that are able to draw on a plain, for a small space, the weight of three tons, and which can with ease, and for continuance, draw half that weight. The pack-horses of Yorkshire usually carry a burden of 420 lb. over the highest hills of the north, as well as the most level roads. But the most remarkable proof of the strength of our British horses is derived from that of our mill-horses; some of which will at one load carry 13 measures, which at a moderate computation of 70 lb. each, will amount to 910 lb.

96. SELECTING STALLIONS.

The want of good saddle and road-horses, in this country, and the increase of a bad breed, arises chiefly from the want of proper stallions. The following cautions, if attended to, would obviate this very general evil.

1. Remember that the length of the legs has nothing to do with the size of the body, and that strength depends more on the muscular disposition of the animal than on his height. There are more good middle-sized horses than larger ones that are sixteen or seventeen hands high.

2. Fat, large, black, fleshy legged horses, with coarse large heads, narrow foreheads, and small eyes and nostrils, are, in consequence of their relaxed texture, almost universally affected with swelled legs and greasy heels. They are clearly deficient both in strength of body and vigour of constitution.

3. Horses that are either blind or broken-winded are very improper to breed from, as these particular diseases are often hereditary.

4. Perfect well-formed legs and feet are of the greatest importance in the choice of a stallion; for when the feet of horses are disposed to dryness and inflammation, the owner is exposed to constant vexation and disappointment.

5. The temper of a stallion is also an object of importance, for some are naturally vicious, which overbalances many other good qualities.

6. Inferior stallions, which cover at a low price, have generally more mares put to them than they

ought to have, and the stock is weak and under-sized in proportion to the excess.

97. Breeding Mares.

Every farmer who possesses a mare, whether well or ill formed, is determined to breed from her, under the idea that if she produces any thing in the form of a horse, it will obtain a ready sale. Thus the country is filled with a stock of animals, fit for little else but to vex their owners and consume the produce of the earth.

There prevails an idea that a good breeding mare should have a large belly, as the more room a foal has in the dam, the better proportioned it will be. Nothing can be more absurd: for great-bellied, long-backed mares are the unfittest to breed from: and, being generally weak and relaxed they produce the smallest foals. The size of the foal depends more upon the strength and vigour of the dam's constitution, than upon the dimensions of her belly.

Very old mares naturally decline in constitution, and cannot reasonably be supposed to be so fit for breeding as young ones. Besides, from a decay of the teeth they do not graze well, and artificial food cannot supply the foal with nutrition like what is derived from natural resources.

98. Breeding.

Before the stallion is brought to the mare, he should be dressed, as that will greatly increase his ardour. The mare must also be curried, and have no shoes on her hind-feet, some of them being ticklish, and will kick the stallion. A person holds the mare by the halter, and two others lead the stallion by long reins; when he is in a proper situation, another assistant carefully directs the yard, pulling aside the mare's tail, as a single hair might hurt him dangerously. It sometimes happens that the stallion does not complete the work of generation, coming from the mare without making any injection; it should therefore, be attentively observed, whether, in the last moments of the copulation the dock of the stallion's tail has a vibrating motion; for such a motion always accompanies the emission of the seminal lymph. If he has performed the act, he must on no consideration be suffered to repeat it, but be led away directly to the stable, and there kept two days. For, however able a good stallion may be of covering every day during the three months, it is much better to let him be led to a mare only every other day: his produce will be greater, and he himself less exhausted. During the first seven days, let four different mares be successively brought to him; and the ninth day let the first be again brought, and so successively while they continue in heat; but as soon as the heat of any one is over, a fresh mare is to be put in her place, and covered in her turn every nine days; and as several retain even at the first, second, or third time, it is computed that a stallion, by such management, may, during the three months, cover fifteen or eighteen mares, and beget ten or twelve colts.

These animals have a very large quantity of the seminal lymph; so that a considerable portion of it is shed during the emission. In the mares likewise is an emission, or rather distillation of the seminal lymph, during the whole time they are horsing; ejecting a viscid whitish lymph, called the *heats*, which ceases on conception. The ejection of this liquor is the most certain sign of the mare's heat; but it is also known by the inflation of the lower part of the vulva, by her frequent neighings, and attempts to get to the horses.

Though the usual season for the heat of mares be from the beginning of April to the end of June, yet it is not uncommon to find some among a large number that are in heat before that time: but it is advisable to let this heat pass over without giving them to the stallion, because they would foal in winter; and the colts, besides the inclemency of the season, would have bad milk for their nourishment. Again, if the mares are not in heat till after the end of June, they should not be covered that season; because the colts being foaled in summer, have not time for acquiring strength sufficient to repel the injuries of the following winter.

Many, instead of bringing the stallion to the mare, turn him loose into the close, where all the mares are brought together; and there leave him to choose such as will stand to him. This is a very advantageous method for the mares: they will always horse more certainly than in the other; but the stallion, in six weeks, will do himself more damage than in several years by moderate exercise, conducted in the manner we have already mentioned.

About six months after the mare has ceased to shew any desire for the horse, some convulsive motions may be perceived at the flanks when she has drank water freely: and this is the first sure sign of conception. Mares when pregnant will admit of copulation, but it is never attended with any superfœtation. They usually breed till they are fourteen or fifteen years old, and the most vigorous till they are above eighteen.

There is no certain time that the mare carries the foal. It is generally, however, eleven months and ten or fifteen days. They foal standing; whereas most other quadrupeds lie down. Abortion seldom takes place, except when the mare is exposed to very violent exercise, such as are called dead pulls at a heavy load, or in bad roads. On the other hand, proper exercise is of great service to mares in this state.

As soon as the flanks begin to droop, and the udder becomes enlarged, the mare should be separated from other horses, and left at liberty. In foaling, no assistance should be given, unless it appears to be absolutely necessary. Nature can best perform her own operations when left to herself.

If, however, there appears a difficulty in foaling, the hand should be introduced, to ascertain whether the foal presents itself in a proper position, with the head and fore-legs foremost; and if the legs are bent, they should be placed right. If the labour still proves difficult, the mare may be assisted by taking hold of the legs of the foal, and pulling gently *every time she makes an effort.* But even this assistance must not be given until the nose and legs of the foal become visible. After foaling, the mare should be kept as quiet as possible.

It is customary to have a mare covered nine days after her foaling, that no time may be lost; but it is certain, that the mare having, by this means, both her present and future foal to nourish, her ability is divided, and she cannot supply both so largely as she might one only. It would therefore be better, in order to have excellent horses, to let the mares be covered only every other year; they would last the longer, and bring foals more certainly; for, in common studs, it is so far from being true that all mares which have been covered bring colts every year, that it is considered as a fortunate circumstance if half, or at most two-thirds, of them foal.

99. CROSSING THE BREED.

It is always an extremely hazardous speculation to breed from an indifferent animal on either side, under the expectation that the opposite proportions of the horse and mare will produce a happy medium. It very seldom answers the purpose intended. The safest way is to breed from two animals that are exempt from any natural defect.

It is particularly wrong to make disproportioned copulations, as of a small horse with a large mare, or a large horse with a small mare, as the produce of such copulations would be small or badly proportioned. It is by gentle gradations that we must endeavour to arrive at natural beauty.

It is generally supposed, that as improvements in breeding originated by intermixing the native with foreign horses, continuing to breed from the same line would degenerate the stock. This idea, however, is perhaps as fallacious, when applied to the breeding of horses, as it has been found to be in the breeding of cattle and other quadrupeds. Breeding *in-and-in*, as it is called, when the animals are perfect, is, the writer conceives, a sure way of procuring improvement.

100. Colour of Horses.

There is an old adage, that 'a good horse cannot be of a bad colour;' but many experienced judges are of opinion, that not only the beauty, but the disposition of the animal is connected with the colour. The following are Mr. Gibson's ideas on the subject.

101. *The Bays.*

The bays are probably so called from their resembling the colour of a dried bay-leaf. Bay is an excellent colour, and denotes a good nature. The bright bay is an exceedingly beautiful colour, and is deservedly admired. A horse of this colour has generally his mane and tail black, and sometimes a dark list down his back. The dark bays have almost always their knees and pasterns black. Some of these incline to a brown, and are more or less dappled.

102. *The Chesnut.*

The true chesnut is generally of one colour, and his hairs compounded of three colours, the root light, the middle dark, and the points of a pale brown, which makes an agreeable mixture. Sometimes the hair approaches to a fallow colour, only with a sort of beautiful chesnut stain. Where a chesnut happens to be bald or party-coloured, or to have white legs, they are not very agreeable to the eye. There are many good and beautiful horses of this colour.

103. *The Sorrel.*

The sorrel differs from the chesnut in having the hairs of several colours intermixed, and wherein the fox-colour generally predominates. The sorrel horses have often much white about their legs and pasterns; and some are bald over the face, with manes and tails of a sandy colour. Those that have much white about their limbs are apt to be faulty in the feet and tender in constitution.

104. *The Brown.*

This colour is of various degrees; but most brown horses have black manes and tails, often with black joints, though somewhat rusty. They generally grow lighter towards their bellies and flanks, and many are light and mealy about their muzzles. Those that are dappled are esteemed most handsome. The plain brown are often coarse, but strong and serviceable for the draught.

105. *The Black.*

Jet shining black horses, with little white, are very beautiful. White adds neither to their beauty or their goodness. Those that partake most of the brown are generally the strongest in constitution; but Mr. Gibson considers the English black horses, especially of the cart kind, not so hardy as the bays or chesnuts.

106. *The Grey.*

The greys are much diversified in colour. The dapple grey retains his colour the longest, which is a sign of strength in constitution. The silver grey is extremely beautiful, and many of them are very good. The iron grey, with light mane and tail, are not considered the most hardy. The nutmeg greys are often beautiful, as well as hardy. The light plain grey soon grows white, as all other greys do in process of time.

107. *The Roans.*

The roans are a mixture of various colours, where the white predominates. Those that have a mixture of the bay or nutmeg colour are sometimes tolerably handsome. Indeed, the roans are generally better and stronger horses than they appear to be.

108. *The Dun.*

The dun, the fallow-colour, and the cream-colour, have all one common resemblance; and most of them have a list down their backs, with their manes and tails black. Dun horses, though not handsome, often prove useful: the fallow and cream-coloured horses are often both good and beautiful. The fallow, or tawny dun, are sometimes faintly dappled, and look well in a set, when properly matched. The king's cream-coloured horses are bred in Hanover, and seem to be a distinct breed from all others.

There are a great variety of other colours, such as the strawberry, the starling, the flea-bitten, and the peach-colour; but they are rather uncommon. In Germany there are some horses finely spotted with black, red, yellow, and other gay colours, and which sell for a high price as curiosities.

109. COLT-REARING.

The business of breaking a colt, and preserving his temper, will be greatly forwarded by rendering him familiar with the people about him. When about three months old, he should be frequently handled, and have his legs gently taken up, and the feet gently hammered. He should also be haltered, and led about a few minutes every day. This practice will also render it easier to administer medicine, should it become necessary.

Sometimes colts do not thrive, their coats stare, and they become hide-bound. This state of body is frequently produced by worms, and which is usually indicated by a little whitish or light straw-coloured powder adhering beneath the anus. The following ball may be found useful in such cases:

Soccotrine aloes, - -	2 drachms.
Castile soap, - - -	2 drachms.

Or the following:

Barbadoes aloes, -	2 drachms.
Powdered ginger, -	half a drachm.
Oil of wormwood, -	8 drops.
Prepared natron, -	2 scruples.

With syrup of buckthorn sufficient to make a ball.

The above doses are adapted for a colt not below one year old. If two years old, the aloes may be increased two drachms; and if three years old, two drachms more. The dose may be repeated once or twice, as occasion may require, at intervals of a week or ten days.

The same medicine may also be given after the colt has recovered from the strangles.

In case of worms, it will be found useful to give about twenty grains of calomel on the night preceding the giving of the ball.

At two and a half years old, colts shed the two front teeth, which, for a time, renders them incapable of biting the grass so well as they did before. In this case it is proper to give them bran-mashes, with either hay or straw cut like chaff.

While a mild purgative is recommended in these cases, great care should be taken never to permit strong physic to be administered. Even old horses are frequently destroyed by strong doses of physic, and colts can scarcely be expected to resist its injurious effects. 'A valuable blood-colt,' says Mr. White, 'was attacked with colic, which appeared to be of the flatulent kind, and, though violent, not dangerous. The usual remedies were ineffectually employed; and it was found, in attempting to give a clyster, that the internal coat of the gut was so loose and so enlarged, that there was no possibility of injecting it: the colt died about sixteen hours after the attack. On examining the body after death, all the bowels were found nearly healthy, except the rectum, or last gut, near its termination, in which the inner coat was so loose and large, that the cavity was nearly obliterated, and scarcely any passage left for the excrement. The internal sensible coat of the stomach appeared also in a diseased state, being very tender, and easily separated; but it was not inflamed. About a week after, I was accidentally informed, that the man who had the care of this colt, and was about to train him for the turf, had given him three doses of physic; and that the "last had operated *so well,* that he thought the colt would never have ceased purging." This was nearly the man's expression, which he had communicated, in the way of conversation, to a groom, before the colt was taken ill.'

The operation of castration has been treated of before. Some breeders defer this operation as long as possible, in order to give the colt a finer colour, and a fuller and loftier crest and forehand than those geldings that have undergone it when very young. This operation is perhaps carried to too great an extent in this country; and it is really a pity to observe such a number of fine, well-formed geldings rendered incapable of propagating their kind. It is at least surprising that unmutilated horses are not more used in the army. When our troops landed in Egypt, they found the Mamelukes all mounted on stallions; and the French confessed that their cavalry which served in Egypt, and which general Doyle says was decidedly the finest European he ever saw, did not dare to meet them with equal numbers. The horses were so excellent, and the riders so dexterous, that had they understood our military manœuvres, they would have been invincible. On the subject of castration, a popular writer expresses himself in the following manner:

'Castration is more practised in England than in any other part of Europe. It certainly renders the animal more tractable, and it gives the opportunity of turning him to grass with mares as well as with horses with less danger of mischief. But it enfeebles him both in make and constitution, for the gelding is certainly more delicate and less capable of bearing the extremes of heat and cold; and it is worthy of observation, that even the stallions which work in the brewers' drays in London, and which are never clothed in the stable, and are often obliged to stand many hours in the streets, are always fuller of flesh and finer in their coats than the geldings of the same description. In the shape and character of the head there is a very evident difference between the stallion and the gelding. In the stallion the forehead is broader, and the eyes bolder and more prominent; the nostrils are larger and capable of greater expansion; the windpipe, or trachea, is larger; and hence, very probably, may be traced the cause why they are generally better winded than geldings. In neighing, also, the voice of the stallion is more deep and sonorous.'

110. COLT-BREAKING.

Considering the violent and brutal dispositions of many horse-breakers, it is astonishing that so few of these generous animals become restive and unmanageable. Coolness and gentleness are the most effectual means of overcoming the danger and difficulty of breaking a young colt.

Having been accustomed to be handled and haltered, begin by putting on a bridle for a very short time, and, immediately on taking it off, feed him; and he will soon become reconciled to the process. The bit should be a plain snaffle, thicker than the one afterwards used; and in the centre should be fixed a slabbering bit, which, lying loosely upon the tongue, excites the horse to move his jaws, and prevents him from bearing heavily upon it, so as to deaden his mouth. He should at first be reined up very easily, and but for a short time to the surcingle.

The saddle should be fixed with great care, and the girth should be no tighter than what is necessary to prevent the saddle from turning round. Care must also be taken that the crupper is a proper length, and does not gall the tail. Let the colt's head be at perfect liberty in leading him out of the stable, lest he should start and be afraid of striking his head against the upper part of the door; an apprehension natural in young colts. Always put his bridle and saddle on with great gentleness, as improper haste or violence may so alarm him, that he will never again quietly submit to the operation. Avoid also holding him by the lower part of his nose, because as a horse breathes only through his nostrils, and not through his mouth, the pressure of that part of the nose stops his breathing, and he naturally becomes impatient from the dread of being suffocated.

It is customary to lead a colt at first with a cavesson, which is buckled round the nose; but this is a very harsh and severe instrument, if not used with peculiar gentleness. Instances have sometimes occurred of the bones of the nose becoming diseased, from being pinched and bruised by the sudden and violent jerks given by the hand of an impatient, drunken, or unskilful breaker.

The first and most useful lesson in breaking a colt is to lounge him in a circle. A cavesson is fixed to his head, to which is attached a long small cord. This cord being held by the breaker, the colt trots round him in as large a circle as the cord will admit. This, however, must be done very gently, and but little at a time: for more horses are spoiled, by over much work than by any other treatment, and that by very contrary effects; for sometimes it drives them into vice, madness, and despair, and often stupifies and totally dispirits them.

The earl of Pembroke very justly observes, that the first obedience required in a horse is going forwards; till he perform this duty freely, never even think of making him rein back, which would inevitably make him restive: as soon as he goes forwards readily, stop and caress him. You must remember in this, and likewise in every other exercise, to use him to go equally well to the right and left: and when he obeys, caress him and dismiss him immediately. If a horse that is very young takes fright and stands still, lead on another horse before him, which probably will induce him instantly to follow. Put a snaffle in his mouth: and when he goes freely, saddle him, girting him at first very loose. Let the cord which you hold be long and loose, but not so much so as to endanger the horse's entangling his legs in it. It must be observed that small circles, in the beginning, would constrain the horse too much, and put him upon defending himself. No bend must be required at first; never suffer him to gallop false; but whenever he attempts it, stop him without delay, and then set him off afresh. If he gallops of his own accord, and true, permit him to continue it; but if he does it not voluntarily, do not demand it of him at first. Should he fly and jump, shake the cord gently upon his nose without jerking it, and he will fall into his trot again. If he stands still, plunges, or rears, let the man who holds the whip make a noise with it; but never touch him till it be absolutely necessary to make him go on. When you change hands, stop and caress him, and entice him by fair means to come up to you: for by presenting yourself, as some do, on a sudden before horses, and frightening them to the other side, you run a great risk of giving them a shyness. If he keeps his head too low, shake the cavesson to make him raise it; and in whatever the horse does, whether he walks, trots, or gallops, let it be a constant rule that the motion be determined, and really such as is intended, without the least shuffling, pacing, or any other irregular gait.

The next process to be commenced is what is called *working in hand.* This requires a certain degree of activity, a quick eye, and, like every thing else about horses, a good temper and judgment.—Though it is in reality no difficult thing, few people succeed in it. It should be begun by trotting with the horse's head bent inwards, by a strap, tied from the side ring on the cavesson to the ring on the pad. A strap and buckle to the head-stall under the throat, is very useful to prevent the side part of it from chafing against the eye, which it is very apt to do when the bending strap is used, and drawn at all tight. This should be done for a little while only at a time.

If the horse leans on the strap, which is tied to bend him, take off the cavesson, and use in its stead a long string, coming first from the ring on the pad, and from thence through the eye of the snaffle; and also, if the horse's head is low, through the ring on the head-stall, and from thence through the ring on the pad, into the hand of the persons on foot, who must humour it, yielding and shortening it occasionally, which will prevent the horse from leaning, and will render him light. The long string, thus used, will do very well alone without the strap, when the horse is accustomed to bend, and to trot determined round the person who stands in the centre, and holds the long string.

After horses have been accustomed to be bent with a strap at the *longe*, they will very soon *longe* themselves, as it were; that is to say, that when bent with the strap they will go very well without any longe; and indeed horses may be brought, with patience and gentleness, to work very well so, on almost all lessons in hand.

Next begin the *epaule en dedans*; and after that, the head to the wall, the croupe to the wall, backing, &c. on all figures by degrees.

Most horses generally go the head to the wall more cordially at first than they do the croupe to the wall. Working in the hand is, in fact, a kind of driving: two persons on foot should be employed; one indeed may do, if he is a handy person, but two are much better at first. One of these should hold a long string, and in some lessons two, and a *chambriere* standing at some distance from the horse; the other person stands near the horse, holding the reins of the snaffle, and a hand whip, to keep the horse off from him if necessary. Girt on a pad with a crupper to it on the horse. The pad should have a large ring in the centre upon the top of it, and about four inches lower down on each side, a smaller one.

On the top of the pad, a little forwarder than the great ring, there must be a small strap and buckle, which serve to buckle in the snaffle-reins, and to prevent their floating about, and the horse entangling his legs in them in the longe. Horses should never be worked in hand with any thing in their mouths but a large, thick, plain running snaffle; a bridle is too ticklish, and would spoil the horse's mouth, unless it be in the hands of a very able master indeed; for, in working in hand, it is next to impossible to be sufficiently gentle and delicate with it. The eyes of the snaffle should be large, and on the head stall, about the height of the horse's eye, should be fixed a ring on each side. The person with the *chambriere* holds a long string, about eighteen feet long, (so as to be out of the reach of the horse's heels) which must be smooth, of a proper thickness, and run freely. This string, in the action of the *epaule en dedans*, or shoulder within to the right, is buckled to the right hand small ring on the pad, where the reins of the running snaffle are first fixed; from thence it passes through the right eye of the snaffle, and from that to the right hand small ring on the head-stall, and through the large ring on the top of the pad, into the hand of the person who holds the *chambriere*; and who by means of this string, bends the horse to the right, and brings in his shoulder, following him on his right side, and tightening or loosening the string as he finds it necessary. If the horse's forehand is high and well placed, it will not be necessary to pass the string through the ring upon the head-stall; at the same time another person standing near the horse, the snaffle reins separated, and the right one tied loose on the right side, leads him on with the left rein of the snaffle in his hand, walking near his head, and taking care to keep the shoulders in their proper places, and not to take off from the bend to the right, which is occasioned by the string in the other person's hand, who will find it most convenient, when working on this lesson to the right, to hold the string in his right hand, and the *chambriere* in his left, and so *vice versa;* these he must make use of, and keep himself more or less upon the flank centre, or rear of the horse, as he finds it necessary. In the changes from right to left in the *epaule en dedans*, the person nearest the horse must be quick in getting on the horse's left side, and the person with the *chambriere* must do the same; the former coming round with the horse's head before him, and the latter round by his croupe behind him, and so *vice versa* to the left. In the head and in the croupe to the wall, both the men are already properly placed for the changes.

In this lesson of the *epaule en dedans*, in hand, when a horse is very clumsy, heavy in hand, and stiff, headstrong, vicious, or apt to strike with his fore-feet, or to rear or kick out behind, a stick or pole is very useful. The stick, about seven feet long, is fastened by a strap or buckle through the eye of the snaffle, where the reins pass; a man places himself at a certain distance on the right side of the horse's head, going before him over the ground to be worked upon, and holds the stick at arm's length, having tied it so as to leave room to play, as he draws it gently backwards and forwards to refresh the horse's mouth. The other man holds a long rein and the *chambriere*. Like the pillars, this lesson is good or bad according to the hands it is in. Instances have occured of a horse's jaw being broken, and his tongue cut in two by it; and therefore it should be used in the most skilful and temperate manner, or not at all. It is useful in raising horse's heads, particularly those that are apt to get their heads down, or to kick in *piaffing* on forwards. Almost any lessons may be accomplished by the help of this pole.

To work in hand, the head and the croupe to the wall, two strings, fixed as above described, (only that they must not come at all through the large ring on the pad, but from the small rings on the head-stall immediately into the hand of the person who holds the *chambriere)* must be used, one on each side; one string indeed might do; the right one in working to the right, and so *vice versa;* but two are much better, and often necessary to keep the horse in a proper position. Passing the strings through the rings of the head-stall is not necessary when the horse carries his forehead high and well; and when they do pass through them, great care must be taken, by a gentle use of them, that they do not gag the horse; these two strings must be buckled together, and meet in the hand of the person who holds the *chambriere*, and who is on the left side of the horse; the snaffle-reins too must be joined, and the person near the horse, who holds them, must also be on the left side of him and near his shoulder, holding the right rein of the snaffle the shortest, to bend him that way, (as does also the right string kept the tightest in the other person's hand) and making use also of the left rein, when necessary to keep the horse in a proper position, and to guide him occasionally, as if he was on his back, and never so as to take away from the bend.

The lesson of the head or croupe to the wall is often done better in hand, when the man who follows, and holds the *chambriere*, has no long reins, or else only one long rein, unless the horse is very awkward, refractory, or playful; for one of the long reins is apt to get into the way of the man who is nearer to the horse. When only one long rein is used, it will be, of course, the right hand one to the right, and so *vice versa;* and indeed, in other lessons in hand, these long reins are no longer necessary when the horse is grown handy, provided the man nearer to him has a feeling, sensible, good hand, and perfectly knows what he is about.

On the head or croupe to the wall in hand, it is a good way, at first, to have a man holding a long string buckled simply to the eye of the snaffle, go before the horse, leading him, as it were, along the wall. Horses will, with care and patience, not be very long before they work well in hand; though indeed never so truly or delicately as under a good rider. Horses worked well in hand look particularly well coming up the middle of the school, and backing there on the *piaffer;* as also in the *piaffer* both bent and straight, animated properly, and kept in good position, their mouths being properly played with and humoured. When horses become free and familiar with this method of working them in hand, it should be done by degrees on all paces, fast and slow, but always without noise, hurry, or confusion.

Nothing determines them better than working in hand, when it is well done. As the want of accuracy and delicacy is, from the great numbers, in some measure unavoidable in military schools, it is not amiss to teach troop horses a little their lessons in hand, before the men perform them on their backs. One of these strings may be used by the man who holds the *chambriere* on foot, when the horse is mounted; and it is a good method to do so sometimes, on all lessons and on all figures.—This string, fastened as in the *epaule en dedans*, only that it goes immediately from the eye of the snaffle into the hand of the person on foot, who must stand in the centre of the circle, helps the person who is mounted very much to bend him, as it does indeed in all other lessons. When the horse has a rider on him, only one string is necessary to be held by the person on foot. In the head to the wall, croupe to the wall, piaffing, &c. &c. it must be shifted (for example, in the head to the wall, &c. &c. to the right) under the horse's jaw, from through the right eye of the snaffle, into the hand of the person on foot, who is on the left of the horse; for it need not pass through the small ring on the head-stall of the snaffle, the man upon the horse being the proper person to keep the horse's head up.

It is sometimes expedient to pass the string over the horse's neck, under the rider's hand, instead of under the horse's jaw. It must be fixed, in the first place, like a running snaffle, to the skirts of the saddle, from whence it goes, as above mentioned, through the eye of the snaffle, into the hand of the person on foot, after having passed under the horse's jaw. To *piaffer* too without a rider, or square, and all other figures advancing gently and well into the corners, is a very good lesson. One man must stand exactly before the horse with his face to him, holding the two eyes of the snaffle, and keep the horse advancing gently, by going backwards himself.—The man with the *chambriere* must stand behind the horse, and animate him or not, as he finds necessary. Backing the horse is also sometimes useful: this may also be done on all figures.

The degree of vivacity or dulness in the horse must determine how the man with the *chambriere* is to act, and where he is to place himself when the horse is backing.

A horse, when well taught, may be worked; and it is then the best way, by a single man, with long reins and a *chambriere*, without any other person to assist. All airs in hand should be worked in that manner whenever the animal is become supple and obedient.

Working in hand is particularly useful in military equitation, because it spares the horse the fatigue of any weight upon him; and the want of a proper allowance of corn, to enable horses to go through the work with vigour, is a general army complaint almost in all European services. When it is well performed, it has a masterly, active appearance, and is always very useful in suppling horses; but, past all doubt, a good rider mounted, who feels every motion of the horse, must act with more precision, delicacy, and exactness.

111. TRAINING AND MANAGING HORSES.

It will now be proper to give some plain directions to riders, how to manage themselves as well as how to manage their horses. The two subjects are closely connected, and will be best considered in conjunction.

112. *Method of placing the Rider.*

It is necessary that the greatest attention, and the same gentleness that is used in teaching the horses, be observed likewise in teaching the rider, especially at the beginning. Every method and art must be practised to create and preserve, both in man and horse, all possible feeling and sensibility; contrary to the usage of most riding-masters, who seem industriously to labour at abolishing these principles both in the one and the other. As so many essential points depend upon the manner in which a man is at first placed on horseback, it ought to be considered and attended to with the strictest care and exactness.

The first time a man is put on horseback, it ought to be upon a very gentle one. He never should be made to trot, till he is quite easy in the walk; nor gallop till he is able to trot properly. The same must be observed in regard to horses; they should never be made to trot till they are obedient, and their mouths are well formed on a walk, nor be made to gallop, till the same be effected on a trot. When he is arrived at such a degree of firmness in his seat, the more he trots, and the more he rides rough horses, the better. This is not only the best method, but also the easiest and the shortest: by it a man is soon made sufficiently an horseman for a soldier: but by the other detestable methods that are commonly used, a man, instead of improving, contracts all sorts of bad habits, and rides worse and worse every day; the horse too becomes daily more and more unfit for use. In proceeding according to the manner proposed, a man is rendered firm and easy upon the horse, both his own and the horse's sensibility is preserved, and each in a situation fit to receive and practise all lessons effectually.

Every horse should be accustomed to stand still when he is mounted. One would imagine this might be readily granted; yet we see how much the contrary is practised. When a gentleman mounts at a livery-stable, the groom takes the horse by the bit, which he bends tight round his under jaw: the horse striving to go on, is forced back; advancing again, he frets, as he is again stopped short, and hurt by the manner of holding him. The rider, in the mean time, mounting without the bridle, or at least holding it but slightly, is helped to it by the groom, who being thoroughly employed by the horse's fluttering, has at the same time both bridle and stirrup to give. This confusion would be prevented, if every horse was taught to stand still when he is mounted. Forbid your groom therefore, when he rides your horse to water, to throw himself over him from a horse-block, and kick him with his leg, even before he is fairly upon him. This wrong manner of mounting is what chiefly teaches your horse the vicious habit against which we are here warning. On the other hand, a constant practice of mounting in the proper manner is all that is necessary to prevent a horse's going on till the rider is quite adjusted in the saddle.

The next thing necessary therefore is, that the rider should mount properly. The common method is to stand near the croup or hinder part of the horse, with the bridle held very long in the right hand. By this manner of holding the bridle before you mount, you are liable to be kicked; and when you are mounted, your horse may go on some time, or play what gambols he pleases, before the rein is short enough in your hand to prevent him. It is common likewise for an awkward rider, as soon as his foot is in the stirrup, to throw himself with all his force to gain his seat; which he cannot do, till he has first overbalanced himself on one side or the other: he will then wriggle into it by degrees. The way to mount with ease and safety is, to stand rather before than behind the stirrup. In this posture take the bridle short, and the mane together in your left hand, helping yourself to the stirrup with your right, so that your toe may not touch the horse in mounting. While your left foot is in the stirrup, move on your right, till you face the side of the horse, looking across over the saddle. Then with your right hand grasp the hinder part of the saddle; and with that and your left, which holds the mane and bridle, lift yourself upright on your left foot. Remain thus a mere instant on your stirrup, only so as to divide the action into two motions. While you are in this posture, you have a sure hold with both hands, and are at liberty, either to get safely down, or to throw your leg over and gain your seat. By this deliberate motion, likewise, you avoid, what every good horseman would endeavour to avoid, putting your horse into a flutter.

When you dismount, hold the bridle and mane together in your left hand, as when you mounted; put your right hand on the pommel of the saddle, to raise yourself; throw your leg back over the horse, grasp the hinder part of the saddle with your right hand, remain a moment on your stirrup, and in every respect dismount as you mounted; only what was your first motion when you mounted, becomes the last in dismounting. Remember not to bend your right knee in dismounting, lest your spur should rub against the horse.

It may next be recommended to hold your bridle at a convenient length. Sit square, and let not the purchase of the bridle pull forward your shoulder; but keep your body even, as it would be if each hand held a rein. Hold your reins with the whole grasp of your hand, dividing them with your little finger. Let your hand be perpendicular; your thumb will then be uppermost, and placed on the bridle. Bend your wrist a little outward: and when you pull the bridle, raise your hand toward your breast, and the lower part of the palm rather more than the upper. Let the bridle be at such a length in your hand, as if the horse should stumble, you may be able to raise his head, and support it by the strength of your arms, and the weight of your body thrown backward. If you hold the rein too long, you are subject to fall backward as your horse rises.

If, knowing your horse perfectly well, you think a tight rein unnecessary, advance your arm a little (but not your shoulder) towards the horse's head, and keep your usual length of rein. By this means you have a check upon your horse while you indulge him.

If you ride with a curb, make it a rule to hook on the chain yourself; the most quiet horse may bring his rider into danger, should the curb hurt him. If, in fixing the curb, you turn the chain to the right, the links will unfold themselves, and then oppose a farther turning. Put on the chain loose enough to hang down on the horse's under lip, so that it may not rise and press his jaw, till the reins of the bridle are moderately pulled.

If your horse has been used to stand still when he is mounted, there will be no occasion for a groom to hold him: but if he does, suffer him not to touch the reins, but that part of the bridle which comes down the cheek of the horse. He cannot then interfere with the management of the reins, which belongs to the rider only; and holding a horse by the curb (which is ever painful to him) is evidently improper when he is to stand still.

Another thing to be remembered is, not to ride with your arms and elbows as high as your shoulders; nor let them shake up and down with the motion of the horse. The posture is unbecoming, and the weight of the arms (and of the body too if the rider does not sit still) acts in continual jerks on the jaw of the horse, which must give him pain, and make him unquiet, if he has a tender mouth or any spirit.

Bad riders wonder why horses are gentle as soon as they are mounted by skilful ones, though their skill seems unemployed: the reason is, the horse goes at his ease, yet finds all his motions watched; which he has sagacity enough to discover. Such a rider hides his whip, if he finds his horse is afraid of it; and keeps his legs from his sides, if he finds he dreads the spur.

Avoid the ungraceful custom of letting your legs shake against the sides of the horse: and as you are not to keep your arms and elbows high and in motion, so you are not to rivet them to your sides, but let them fall easy. One may, at a distance, distinguish a genteel horseman from an awkward one: the first sits still, and appears of a piece with his horse; the latter seems flying off at all points.

It is often said with emphasis, that such a one has no *seat* on horseback; and it means, not only that he does not ride well, but that he does not sit on the right part of the horse. To have a *good seat*, is to sit on that part of the horse which as he springs, is the centre of motion; and from which, of course, any weight would be with most difficulty shaken. As in the rising and falling of a board placed in *equilibrio*, the centre will be always most at rest, the true seat will be found in that part of your saddle into which your body would naturally slide if you rode without stirrups; and is only to be preserved by a proper poise of the body, though the generality of riders imagine it to be done by the grasp of the thighs and knees. The rider should consider himself as united to his horse in this point; and when shaken from it, endeavour to restore the balance.

Perhaps the mention of the two extremes of a bad seat may help to describe the true one. The one is, when the rider sits very far back on the saddle, so that his weight presses the loins of the horse; the other when his body hangs forward over the pommel of the saddle. The first may be seen practised by grooms, when they ride with their stirrups affectedly short; the latter, by fearful horsemen on the least flutter of the horse. Every *good* rider has, even on the hunting saddle, as *determined* a place for his thighs, as can be determined for him by the bars of a demi-peak. Indeed there is no difference between the seat of either: only, as in the first you ride with shorter stirrups, your body will be consequently more behind your knees.

To have a good seat yourself, your saddle must sit well. To fix a precise rule might be difficult: it may be a *direction*, to have your saddle press as nearly as possible on that part which we have described as the point of union between the man and horse; however, so as not to obstruct the motion of the horse's shoulders. Place yourself in the middle or lowest part of it: sit erect, but with as little constraint as in your ordinary sitting. The ease of action marks the gentleman: you may repose yourself, but not lounge. The set and studied erectness acquired in the riding-house, by those whose deportment is not easy, appears ungenteel and unnatural.

If your horse stops short, or endeavours by rising and kicking to unseat you, bend not your body forward, as many do in these circumstances: that motion throws the breech backward, and you off your fork or twist, and out of your seat; whereas, the advancing the lower part of your body, and bending back the upper part and shoulders, is the method both to keep your seat, and to recover it when lost. The bending your body back, and that in a great degree, is the greatest security in *flying* leaps; it is a security too when your horse leaps *standing*. The horse's rising does not try the rider's seat; the lash of his hind-legs is what ought chiefly to be guarded against, and is best done by the body's being greatly inclined back. Stiffen not your legs or thighs; and let your body be pliable in the loins, like the coachman's on his box. This loose manner of sitting will elude every rough motion of the horse; whereas the fixture of the knees, so commonly laid a stress on, will in great shocks conduce to the violence of the fall.

Was the cricket-player, when the ball is struck with the greatest velocity, to hold his hand firm and fixed when he receives it, the hand would be bruised, or perhaps the bones fractured by the resistance. To obviate this accident, he therefore gradually yields his hand to the motion of the ball for a certain distance; and thus, by a due mixture of opposition and obedience, catches it without sustaining the least injury. The case is exactly the same in riding: the skilful horseman will recover his poise by giving some way to the motion; and the ignorant horseman will be flung out of his seat by endeavouring to be fixed.

Stretch not out your legs before you; this will push you against the back of the saddle; neither gather up your knees like a man riding on a pack; this throws your thighs upwards: each practice unseats you. Keep your legs straight down; and sit not on the most fleshy part of the thighs, but turn them inwards, so as to bring in your knees and toes: and it is more safe to ride with the ball of the foot pressing on the stirrup, than with the stirrup as far back on the heel: for the pressure of the heel being in that case behind the stirrup, keeps the thighs down.

When you find your thighs thrown upwards, widen your knees to get them and the upper part of your fork lower down on the horse. Grasp the saddle with the hollow or inner part of your thighs, but not more than just to assist the balance of your body: this will also enable you to keep your spurs from the horse's sides, and to bring your toes in, without that affected and useless manner of bringing them in practised by many. Sink your heels straight down; for while your heels and thighs keep down, you cannot fall: this (aided with the bend of the back) gives the security of a seat to those who bear themselves up in their stirrups in a swift gallop, or in the alternate rising and falling in a full trot.

Let your seat determine the length of your stirrups, rather than the stirrups your seat. If more precision is requisite, let your stirrups (in the hunting saddle) be of such a length, as that, when you stand in them, there may be the breadth of four fingers between your seat and the saddle.

It would greatly assist a learner, if he would practise riding in a large circle, without stirrups; keeping his face looking on the outer part of the circle, so as not to have a full view of the horse's head, but just of that ear which is on the outward part of the circle; and his shoulder, which is towards the centre of the circle, very forward. By this means you learn to balance your body, and keep a true seat, independent of your stirrups: you may probably likewise escape a fall, should you at any time lose them by being accidentally shaken from your seat.

As the seat in some measure depends on the saddle, it may not be amiss to observe, that because a saddle with a high pommel is thought dangerous, the other extreme prevails, and the pommel is scarce allowed to be higher than the middle of the saddle. The saddle should lie as near the back-bone as can be, without hurting the horse; for the nearer you sit to his back, the better seat you have. If it does so, it is plain the pommel must rise enough to secure the withers from pressure: therefore a horse whose withers are higher than common, requires a higher pommel. If, to avoid this, you make the saddle of a more straight line, the inconvenience spoken of follows; you sit too much above the horse's back, nor can the saddle form a proper seat. There should be no ridge from the button at the side of the pommel, to the back part of the saddle. That line should also be a little concave, for your thighs to lie at ease. In short, a saddle ought to be, as nearly as possible, as if cut out of the horse.

When you want your horse to move forward, raise his head a little, and touch him gently with your whip; or else, press the calves of your legs against his sides. If he does not move fast enough, press them with more force, and so till the spur just touches him. By this practice he will (if he has any spirit, move upon the least pressure of the leg.—Never spur him by a kick; but if it be necessary to spur him briskly, keep your heels close to his sides, and slacken their force as he becomes obedient.

When your horse attempts to be vicious, take each rein separate, one in each hand, and advancing your arms forward, hold him very short. In this case it is common for the rider to pull him hard, with his arms low. But the horse by this means having his head low too, has it more in his power to throw out his heels: whereas, if his head be raised very high, and his nose thrown out a little, which is consequent, he can neither rise before nor behind; because he can give himself neither of these motions without having his head at liberty. A plank placed in *equilibrio* cannot rise at one end unless it sinks at the other.

If your horse is headstrong, pull not with one continued pull, but stop, and back him often, just shaking the reins, and making little repeated pulls till he obeys. Horses are so accustomed to bear on the bit when they go forward, that they are discouraged if the rider will not let them do so.

If a horse is loose-necked, he will throw up his head at a continued pull; in which situation the rider seeing the front of his face, can have no power over him. When your horse does this, drop your hand and give the bridle play, and he will of course drop his head again into its proper place: while it is coming down, make a second gentle pull, and you will find his mouth. With a little practice, this is done almost instantaneously; and this method will stop, in the distance of a few yards, a horse, which will run away with those who pull at him with all their might. Almost every one must have observed, that when a horse feels himself pulled with the bridle, even when he is going gently, he often mistakes what was designed to stop him, as a direction to bear on the bit and to go faster.

Keep your horse's head high, that he may raise his neck and crest; play a little with the rein, and move the bit in his mouth, that he may not press on it in one constant and continued manner; be not afraid of raising his head too high; he will naturally be too ready to bring it down, and tire your arms with its weight, on the least abatement of his mettle. When you feel him heavy, stop him, and make him go back a few paces: thus you break by degrees his propensity to press on his bridle.

You ought not to be pleased (though many are) with a round neck, and a head drawn in towards his breast: let your horse carry his head bridling in, provided he carries it high, and his neck arching upwards; but if his neck bends downwards, his figure is bad, his sight is too near his toes, he leans on the bridle, and you have no command over him. If he goes pressing but lightly on the bridle, he is the more sure-footed, and goes pleasanter; as your wrist only may guide him. If he hangs down his head, and makes you support the weight of that and his neck with your arms bearing on his fore-legs (which is called *being on his shoulders)*, he will strike his toes against the ground, and stumble.

If your horse is heavy upon the bit, tie him every day, for an hour or two, with his tail to the manger, and his head as high as you can make him lift it, by a rein on each post of the stall, tied to each ring of the snaffle bit.

Horse-breakers and grooms have a great propensity to bring a horse's head *down*, and seem to have no seat without a strong hold by the bridle. They know indeed that the head should yield to the reins, and the neck form an arch; but do not take the proper pains to make it an arch *upward*. A temporary effect of attempting to raise a horse's head, may perhaps be making him push out his nose. They will here tell you, that his head is too high already; whereas it is not the distance from his *nose*, but from the *top* of his head to the ground, which determines the head to be high or low. Besides, although the fault is said to be in the manner of carrying the head, it should rather be said to be in that of the neck; for if the neck was raised, the head would be more in the position of one set on a well formed neck.

The design therefore of lifting up the head, is to raise the neck, and *thereby* bring in the head; for even while the bridle makes the same line from the rider's hand to the bit, the horse's nose may be either drawn in, or thrust out, according as his neck is raised or depressed. Instead of what has been here recommended, we usually see colts broke with their heads cavessoned very low, their necks stiff, and not in the least suppled. When the breaking-tackle is left off, and they are mounted for the road, having more food and rest, they frequently plunge, and a second breaking becomes necessary. Then, as few gentlemen can manage their own horses, they are put into the hands of grooms, from whom they learn a variety of bad habits.

If on the other hand, your horse carries his head (or rather his nose) too high, he generally makes some amends by moving his shoulders lightly, and going safely. Attend to the cause of this fault. Some horses have their necks set so low on their shoulders, that they bend first down, then upwards, like a stag's. Some have the upper line of their necks, from their ears to their withers, too short. A head of this sort cannot possibly bend inwards and form an arch, because the vertebræ (or neck bones) are too short to admit of flexure; for in long and short necked horses the number of the vertebræ is the same. In some the jaw is so thick, that it meets the neck, and the head by this means has not room to bend. On the other hand, some have the underline from the jaw to the breast so short, that the neck cannot rise.

In all these cases you may gain a *little* by a nice hand with an easy bit; but no curb, martingale, or other forcible method, will *teach* a horse to carry his head or neck in a posture which nature has made uneasy to him. By trying to pull in his nose farther than he can bear, you will add a bad habit to nature. You could not indeed *contrive* a more effectual method to make him continually toss his nose up, and throw his foam over you.

The rule already given to ride a loose-necked horse, will be a proper one for all light-mouthed horses; one caution being added, which is, always to search whether his saddle or girths may not in some way pinch him; and whether the bit may not hurt his lips by being too high in his mouth: because, whenever he frets from either of these causes, his head will not be steady.

It is a common custom to be always pulling at the bridle, as if to set off to advantage either the spirit of the horse, or the skill of the rider. Our horses therefore are taught to hold their heads low, and pull so as to bear up the rider from the saddle standing in his stirrups, even in the gentlest gallop: how very improper is this we are experimentally convinced, when we happen to meet with a horse which gallops otherwise. We immediately say, *he canters excellently*, and find the ease and pleasure of his motion. When horses are designed for the race, and swiftness is the only thing considered, the method may be a good one.

It is not to be wondered that *dealers* are always pulling at their horse; that they have the spur constantly in their sides, and are at the same time continually checking the rein: by this means they make them bound, and champ the bit, while their rage has the appearance of spirit. These people ride with their arms spread, and very low on the shoulders of their horses: this method makes them stretch their necks, and gives a better appearance to their forehands; it conceals also a thick jaw, which, if the head was up, would prevent its yielding to the bit; it hides likewise the ewe-neck, which would otherwise shew itself. Indeed, if you have a horse unsteady to the bit, formed with a natural heavy head, or one which carries his nose obstinately in the air, you must find his mouth where you can, and make the best of him.

Many horses are taught to start, by whipping them for starting. How is it possible they can know it is designed as a punishment? In the riding-house, you teach your horse to rise up before, and to spring and lash out his hinder legs, by whipping him when tied between two pillars, with his head a little at liberty. If he understood this to be a punishment for doing so, he would not by that method learn to do it. He seems to be in the same manner *taught* to spring and fly when he is frightened. Most horses would go quietly past an object they were beginning to fly from, if their riders, instead of gathering up their bridles, and showing themselves so ready, should throw the reins loose upon their necks.

When a horse starts at any thing on one side, most riders turn him out of the road, to make him go up to what he starts at; if he does not get the better of his fear, or readily comply, he generally goes past the object, making with his hinder parts, or croup, a great circle out of the road; whereas, he should learn to keep straight on, without minding objects on either side.

If he starts at any thing on the left, hold his head high, and keep it straight in the road, pulling it *from* looking at the thing he starts at, and keeping your right leg hard pressed against his side, towards his flank; he will then go straight along the road. By this method, and by turning his head a little more, he may be forced with his croup close up to what frightened him; for as his head is pulled one way, his croup necessarily turns the other. Always avoid a quarrel with your horse, if you can: if he is apt to start, you will find occasions enough to exercise his obedience when what he starts at lies directly in his way, and you *must* make him pass; if he is not subject to start, you should not quarrel with him about a trifle.

It must be observed, however, that this rule in going past an object may perhaps be a little irregular in a managed horse, which will always obey the leg: but even such a horse, if he is really afraid, and not restive, it may not be amiss to make look another way; unless the object be something you would particularly accustom him to the sight of.

The case will also be different with a horse whose fear is owing to his being not used to objects; but such a one is not to be rode by any horseman to whom these rules are directed: the starting here meant arises merely from the horse's being pampered, and springing through liveliness.

The notion of the necesssity of making a horse go immediately up to every thing he is afraid of, and not suffering him to become master of his rider, seems to be in general carried too far. It is an approved and good method to conquer a horse's fear of the sound of a drum, by beating one near to him at the time of feeding him: this not only familiarises the noise to him, but makes it pleasant, as a forerunner of his meat; whereas, if he was whipped up to it, perhaps he might start at it as long as he lived. Might not this be applied to his starting at other things, and show that it would be better to suffer him (provided he does not turn back) to go a little from and avoid an object he has a dislike to, and to accustom him to it by degrees, convincing him, as it were, that it will not hurt him; than to punish him, quarrel with him, and perhaps submit to his will at last, while you insist on his overcoming his fear in an instant? If he sees a like object again, it is probable he will recollect his dread, and arm himself to be disobedient.

We are apt to suppose that a horse fears nothing so much as his rider; but may he not, in many circumstances, be afraid of instant destruction? of being crushed? of being drowned? of falling down a precipice? Is it a wonder that a horse should be afraid of a loaded waggon? may not the hanging load seem to threaten the falling on him? There cannot be a rule more general, than in such a case, to shew him there is room for him to pass. This is done by turning his head a very little from the carriage, and pressing your leg, which is farthest from it, against his side.

A horse is not to stop without a sign from his rider.—Is it not then probable, that when driven up to a carriage he starts at, he conceives himself obliged either to attack or run against it? Can he understand the rider's spurring him with his face directed to it, as a sign for him to pass it? That a horse is easily alarmed for his face and eyes (he will even catch back his head from a hand going to caress him); that he will not go with any force, face to face, even to another horse (if in his power to stop); and that he sees perfectly sideways,—may be useful hints for the treatment of horses with regard to starting.

Though you ought not to whip a horse for starting, there can be no good effect from clapping his neck with your hand to encourage him. If one took any notice of his starting, it should be rather with some tone of voice which he usually understood as an expression of dislike to what he is doing; for there is *opposition* mixed with his starting, and a horse will ever repeat what he finds has foiled his rider.

Notwithstanding the directions above given, of not pressing a horse up to a carriage he starts at, yet if one which you apprehend will frighten him meets you at a narrow part of the road, when you have once let him know he is to pass it, be sure you remain determined, and press him on. Do this more especially when part of the carriage has already passed you: for if, when he is frightened, he is accustomed to go back, and turn round, he will certainly do it if he finds, by your hand slackening, and legs not pressing, that you are irresolute; and this at the most dangerous point of time, when the wheels of the carriage take him as he turns. Remember not to touch the curb rein at this time; it will certainly check him. It is not known to every one, that the person who would lead a horse by the bridle, should not turn his face to him when he refuses to follow him: if, besides this he raises his arms, shows his whip, or pulls the bridle with jerks, he frightens the horse, instead of persuading him to follow, which a little patience may bring about.

Ride with a snaffle; and use your curb, if you have one, only occasionally. Choose your snaffle full and thick in the mouth, especially at the ends to which the reins are fastened. Most of them are made too small and long; they cut the horse's mouth, and bend back over the bars of his jaw, working like pincers.

The management of the curb is too nice a matter to enter on here, farther than to prescribe great caution in the use of it: a turn of the wrist, rather than the weight of your arm, should be applied to it. The elasticity of a rod, when it has hooked a fish, may give you some idea of the proper play of a horse's head on his bridle; his spirit and his pliableness are both marked by it.

A horse should never be put to do any thing in a curb which he is not ready at: you may force him, or pull his head any way with a snaffle; but a curb acts only in a straight line. It is true, that a horse will be turned out of one track into another by a curb, but it is because he knows it as a *signal*. When he is put to draw in a chair, and does not understand the necessity he is then under of taking a larger sweep when he turns, you frequently see him *restive*, as it is then called: but put him on a snaffle, or buckle the rein to that part of the bit which does not curb him; and the horse submits to be pulled about, till he understands what is desired of him. These directions may suppose your horse to have spirit, and a good mouth; if he has not, you must take him as he is, and ride him with such a bit as you find most easy to yourself.

When you ride a journey, be not so attentive to your horse's nice carriage of himself, as to your encouragement of him, and keeping him in good humour. Raise his head; but if he flags, you may indulge him with bearing a little more upon the bit than you would suffer in an airing. If a horse is lame, tender-footed, or tired, he naturally hangs upon his bridle. On a journey, therefore, his mouth will depend greatly on his strength and the goodness of his feet. Be then very careful about his feet, and let not a farrier spoil them.

Very few, although practised in riding, know they have any power over a horse but by the bridle; or any use for the spur except to make him go forward. A little experience will teach them a farther use. If the left spur touches him (and he is at the same time prevented from going forward), he has a sign, which he will soon understand, to move sideways to the right. In the same manner to the left, if the right spur is closed to him: he afterwards, through fear of the spur, obeys a touch of the leg; in the same manner as a horse moves his croup from one side of the stall to the other, when any one strikes him with his hand. In short, his croup is guided by the leg, as his head is by the bridle. He will never disobey the leg, unless he becomes restive. By this means you will have a far greater power over him; he will move sidewise, if you close one leg to him; and straight forward, if both: even when he stands still, your legs held near him will keep him on the watch; and with the slightest unseen motion of the bridle upwards, he will raise his head, and show his forehand to advantage.

On this use of the legs of the rider, and guidance of the croup of the horse, are founded all the *airs* (as the riding-masters express themselves) which are taught in the manege; the passage, or side-motion of troopers to close or open their files, and indeed all their evolutions. But the convenience of some degree of this discipline for common use is the reason of mentioning it here. It is useful if a horse is apt to stumble or start. If to the first, by pressing your legs to his flank, and keeping up his head, he is made to go light on his fore-legs, which is aiding and supporting him; and the same if he does actually stumble, by helping him at the very instant to exert himself, while as yet any part of him remains not irrecoverably impressed with the precipitate motion. Hence this use of the hand and legs of the rider is called *giving aids* to a horse; for, as to holding up the weight of a heavy unactive horse by mere pulling, it is as impossible as to recover him when falling down a precipice.

A horse is supported and helped by the hands and legs of his rider in every action they require of him; hence he is said to perform his *airs* by the *aids* from his rider.

The same manner is useful if a horse starts. For if, when he is beginning to fly to one side, you leg on the side he is flying to, he stops his spring immediately. He goes past what he started at, keeping straight on, or as you choose to direct him; and he will not fly back from any thing if you press him with both legs. You keep his haunches under him going down a hill: help him on the side of a bank; more easily avoid the wheel of a carriage; and approach more gracefully and nearer to the side of a coach or horseman. When a pampered horse curvets irregularly, and twists his body to and fro, turn his head either to the right or left, or both alternately (but without letting him move out of the track), and press your leg to the opposite side: your horse cannot then spring on his hind-legs to one side, because your leg prevents him; nor to the other, because his head looks that way, and a horse does not start and spring to the side on which he looks. Here it may not be amiss to observe the impropriety of the habit which many riders have, of letting their legs shake against the sides of the horse: if a horse is taught, they are then continually pressing him to violent action; and if he is not, they render him insensible and incapable of being taught. The fretting of a hot horse will hence be excessive, as it can no otherwise be moderated but by the utmost stillness of the seat, hands, and legs of the rider.

Colts at first are taught to *bear* a bit, and by degrees to *pull* at it. If they did not press it, they could not be guided by it. By degrees they find their necks stronger than the arms of a man; and that they are capable of making great opposition, and often of foiling their riders. Then is the time to make them supple and pliant in every part. The part which of all others requires most this pliancy is the neck. Hence the metaphor of *stiff-necked* for *disobedient.* A horse cannot move his head but with the muscles of his neck; this may be called his *helm;* it guides his course, changes and directs his motion.

113. *Suppling Horses by the* Epaule en dedans.

The preceding rules or cautions for horsemen, which are mostly extracted from Thompson's useful work on the subject, will tend to correct the most common bad habits, and contains the best principles of horsemanship. But in training horses it is necessary to proceed in a systematic manner. Having, therefore, cautioned the rider against all bad habits, taught him how to sit firm, and the horse having learned to *longe* on circles, and is prepared and settled in all his motions, it will be proper to proceed on towards a farther suppling and teaching of both.

In setting out upon this new work, begin by bringing the horse's head a little more inwards than before, pulling the inward rein gently to you by degrees. When this is done, try to gain a little on the shoulders, by keeping the inward rein the shorter, as before, and the outward one crossed over towards the inward one. The intention of these operations is this: The inward rein serves to bring in the head, and procures the bend; whilst the outward one, that is a little crossed, tends to make that bend perpendicular and as it should be, that is to say, to reduce the nose and the forehead to be in a perpendicular line with each other: it also serves, if put forwards, as well as also crossed, to put the horse forwards, if found necessary; which is often requisite, many horses being apt in this and other works rather to lose their ground backwards than otherwise, when they should rather advance; if the nose were drawn in towards the breast beyond the perpendicular, it would confine the motion of the shoulders, and have other bad effects. All other bends, besides what are above specified are false. The outward rein, being crossed, not in a forward sense, but rather a little backwards, serves also to prevent the outward shoulder from getting too forwards, and makes it approach the inward one; which facilitates the inward leg's crossing over the outward one, which is the motion that so admirably supples the shoulders. Care must be taken that the inward leg pass over the outward one without touching it; this inward leg's crossing over must be helped also by the inward rein, which you must cross towards and over the outward rein every time the outward leg comes to the ground, in order to lift and help the inward leg over it: at any other time, but just when the outward leg comes to the ground, it would be wrong to cross the inward rein, or to attempt to lift up the inward leg by it; nay, it would be demanding an absolute impossibility, and lugging about the reins and horse to no purpose; because in this case, a very great part of the horse's weight then resting upon that leg, would render such an attempt not only fruitless, but also prejudicial to the sensibility of the mouth, and probably oblige him to defend himself; and, moreover, it would put the horse under a necessity of straddling before, and also of leading with the wrong leg, without being productive of any suppling motion whatsoever.

When the horse is thus far familiarly accustomed to what you have required of him, then proceed to effect by degrees the same crossing in his hinder legs. By bringing in the fore-legs more, you will of course engage the hinder ones in the same work; if they resist, the rider must bring both reins more inward: and, if necessary, put back also, and approach his inward leg to the horse; and if the horse throws out his croup too far, the rider must bring both reins outwards, and, if absolutely necessary, he must also make use of his outward leg, in order to replace the horse properly; observing that the croup should always be considerably behind the shoulders, which in all actions must go first; and the moment that the horse obeys, the rider must put his hand and leg again in their usual position.

A horse should never be turned, without first moving a step forwards; and when it is doing, the rider must not lift his elbow, and displace himself; a motion only of the hand from the one side to the other being sufficient for that purpose. It must also be a constant rule, never to suffer a horse to be stopped, mounted, or dismounted, but when he is well placed. The slower the motions are when a man or horse is taught any thing, the better.

At first, the figures worked upon must be great, and afterwards made less by degrees, according to the improvement which the man and horse make; and the cadenced pace also, which they work in, must be accordingly augmented. The changes from one side to the other must be in a bold, determined trot, and at first quite straight forwards, without demanding any side-motion on two *pistes*, which is very necessary to require afterwards when the horse is sufficiently suppled. By two *pistes* is meant, when the fore parts and hinder parts do not follow, but describe two different lines.

In the beginning, a *longe* is used on circles, and also on straight lines, to help both the rider and the horse; but afterwards, when they are grown more intelligent they should go alone. At the end of the lesson, rein back; then put the horse, by a little at a time, forwards, by approaching both legs gently to his sides, and playing with the bridle: if he rears, push him out immediately into a full trot. Shaking the cavesson on the horse's nose, and also putting one's self before him and rather near to him, will generally make him back, though he otherwise refuse to do it; and moreover a slight use and approaching of the rider's legs will sometimes be necessary in backing, in order to prevent the horse from doing it too much upon the shoulders; but the pressure of the legs ought to be very small, and taken quite away the moment that he puts himself enough upon his haunches. If the horse does not back upon a straight line properly, the rider must not be permitted to have recourse immediately to his leg, and so distort himself by it; but first try, if crossing over his hand and reins to which ever side may be necessary, it will not be alone sufficient, which most frequently it will; if not, then employ the leg.

After a horse is well prepared and settled, and goes freely on in all his several paces, he ought to be in all his works kept, to a proper degree, upon his haunches, with his hinder legs well placed under him: whereby he will be always pleasant to himself and his rider, will be light in hand, and ready to execute whatever may be demanded of him, with facility, vigour, and quickness.

The common method that is used in forcing a horse sidewise, is a most glaring absurdity, and very hurtful to the animal in its consequences; for instead of suppling him, it obliges him to stiffen and defend himself, and often makes a creature that is naturally benevolent, restive, frightened, and vicious.

For horses who have very long and high forehands, and who poke out their noses, a running snaffle is of excellent use; but for such as bore and keep their heads low, a common one is preferable; though any horse's head indeed may be kept up also with a running one, by the rider's keeping his hands very high and forwards: but whenever either is used alone without a bridle upon horses that carry their heads low and that bore, it must be sawed about from one side to the other.

This lesson of the *epaule en dedans* should be taught to such people as are likely to become useful in helping to teach men and to break horses; and the more of such that can be found the better; none others should ever be suffered upon any occasion to let their horses look any way besides the way they are going. But all horses whatever, as likewise all men who are designed for the teaching others, must go thoroughly and perfectly through this excellent lesson, under the direction of intelligent instructors, and often practice it too afterwards; and when that is done, proceed to and be finished by the lessons of head and tail to the wall.

114. *The Head to the Wall and the Croup to the Wall.*

This lesson should be practised immediately after that of the *epaule en dedans*, in order to place the horse properly the way he goes, &c. The difference between the head to the wall, and the croup to the wall, consists in this: in the former, the fore-parts are more remote from the centre, and go over more ground; in the latter, the hinder parts are more remote from the centre, and consequently go over more ground: in both, as likewise in all other lessons, the shoulders must go first. In riding-horses, the head to the wall is the easier lesson of the two at first, the line to be worked upon being marked by the wall, not far from his head.

The motion of the legs to the right, is the same as that of the *epaule en dedans* to the left, and so *vice versa;* but the head is always bent and turned differently; in the *epaule en dedans,* the horse looks the contrary way to that which he goes; in this, he looks the way he is going.

In the beginning, very little bend must be required; too much at once would astonish the horse, and make him defend himself: it is to be augmented by degrees. If the horse absolutely refuses to obey, it is a sign that either he or his rider has not been previously prepared by previous lessons. It may happen, that weakness or a hurt in some part of the body, or sometimes temper, though seldom, may be the cause of the horse's defending himself: it is the rider's business to find out from whence the obstacle arises; and if he finds it to be from the first mentioned cause, the previous lessons must be resumed again for some time; if from the second, proper remedies must be applied; and if from the last cause, when all fair means that can be tried have failed, proper corrections with coolness and judgment must be used.

In practising this lesson to the right, bend the horse to the right with the right rein; helping the left leg over the right (at the time when the right leg is just come to the ground), with the left rein crossed towards the right, and keeping the right shoulder back with the right rein towards your body, in order to facilitate the left leg's crossing over the right; so likewise *vice versa* to the left, each rein helping the other by their properly mixed effects. In working to the right, the rider's left leg helps the hinder parts on to the right, and his right leg stops them if they get too forwards; and so *vice versa* to the left: but neither ought to be used, till the hand being employed in a proper manner has failed, or finds that a greater force is necessary to bring about what is required than it can effect alone: for the legs should not only be corresponding with, but also subservient to, the hand; and all unnecessary aids, as well as all force, ought always to be avoided as much as posssible.

In the execution of all lessons, the equilibre of the rider's body is of great use to the horse; it ought always to go with and accompany every motion of the animal; when to the right, to the right; and when to the left, to the left.

Upon all horses, in every lesson and action, it must be observed that there is no horse but has his own peculiar appui or degree of bearing, and also a sensibility of mouth, as likewise a rate of his own, which it is absolutely necessary for the rider to discover and make himself acquainted with. A bad rider always takes off at least the delicacy of both, if not absolutely destroys it. The horse will inform his rider when he has got his proper bearing in the mouth, by playing pleasantly and steadily with the bit, and by the spray about his chaps. A delicate and good hand will not only always preserve a light appui, or bearing, in its sensibility: but also of a heavy one, whether naturally so or acquired, make a light one. The lighter this appui can be made, the better; provided that the rider's hand corresponds with it; if it does not, the more the horse is properly prepared so much the worse. Instances of this inconvenience of the best of appuis, when the rider is not equally taught with the horse, may be seen every day in some gentlemen, who try to get their horses *bitted* as they call it, without being suitably prepared themselves for riding them: the consequence of which is, that they ride in danger of breaking their necks; till at length, after much hauling about, and by the joint insensibility and ignorance of themselves and their grooms, the poor animals gradually become mere senseless unfeeling posts; and thereby grow, what they call, *settled*. When the proper appui is found, and made of course as light as possible, it must not be kept duly fixed without variation, but be played with; other wise one equally continued tension of reins would render both the rider's hand and the horse's mouth very dull. The slightest and frequent giving and taking is therefore necessary to keep both perfect.

Whatever pace or degree of quickness you work in (be it ever so fast, or ever so slow), it must be cadensed: time is as necessary for a horseman as for a musician.

This lesson of the head and of the tail to the wall must be taught every soldier: scarce any manœuvre can be well performed without it. In closing and opening of files, it is almost every moment wanted.

115. *Curing Starting and other Vices.*

In order to make horses stand fire, the sound of drums, and all sorts of different noises, you must use them to it by degrees in the stable at feeding time; and instead of being frightened at it, they will soon come to it as a signal for eating.

With regard to such horses as are afraid of burning objects, begin by keeping them still at a certain distance from some lighted straw; caress the horse; and in proportion as his fright diminishes, approach gradually the burning straw very gently, and increase the size of it. By these means he will very quickly be brought to be so familiar with it, as to walk undaunted even through it.

As to horses that are apt to lie down in the water, if animating them, and attacking them vigorously, should fail of the desired effect, then break a straw-bottle full of water upon their heads, and let the water run into their ears, which is a thing they apprehend very much.

All troop-horses must be taught to stand quiet and still when they are shot from, to stop the moment you present, and not to move after firing till they are required to do it; this lesson ought especially to be observed in light troops: in short, the horse must be taught to be so cool and undisturbed, as to suffer the rider to act upon him with the same freedom as if he was on foot. Patience, coolness, and temper, are the only means requisite for accomplishing this end. Begin by walking the horse gently, then stop and keep him from stirring for some time, so as to accustom him by degrees not to have the least idea of moving without orders: if he does, then back him; and when you stop him, and he is quite still, leave the reins quite loose.

To use a horse to fire-arms, first put a pistol or a carbine in the manger with his feed: then use him to the sound of the lock and the pan, after which, when you are upon him, show the piece to him, presenting it forwards, sometimes on one side, sometimes on the other; when he is thus far reconciled, proceed to flash in the pan; after which put a small charge into the piece, and so continue augmenting it by degrees to the quantity which is commonly used; if he seems uneasy, walk him forward a few steps slowly; and then stop, back, and caress him. Horses are often also disquieted and unsteady at the clash, and drawing, and returning of swords, all which they must be familiarised to by little and little, by frequency and gentleness.

As horses are naturally apt to be frightened at the sight and smell of dead horses, it is adviseable to habituate them to walk over and leap over carcases of dead horses; and as they are particularly terrified at this sight, the greater gentleness ought consequently to be used.

Horses should also be accustomed to swim, which often may be necessary on service; and if the men and horses both are not used to it, both may be frequently liable to perish in the water. A very small portion of strength is sufficient to guide a horse, any where indeed, but particularly in the water, where they must be permitted to have their heads, and be no-ways constrained in any shape.

Whenever a horse makes resistance, one ought before remedy or correction is thought of, to examine very minutely all the tackle about him, if any thing hurts or tickles him, whether he has any natural or accidental weakness, or in short the least impediment in any part. For want of this precaution, many fatal disasters happen; the poor dumb animal is frequently accused falsely of being restive and vicious; is used ill without reason; and being forced into despair, is in a manner obliged to act accordingly, be his temper and inclination ever so well disposed. It is very seldom the case, that a horse is really and by nature vicious; but if such be found, he will despise all caresses, and then chastisements become necessary.

Correction, according as you use it, throws a horse into more or less violent action, which, if he be weak, he cannot support: but a vicious strong horse is to be considered in a very different light, being able both to undergo and consequently to profit by all lessons, and is far preferable to the best natured weak one upon earth. Patience and attention are never-failing means to reclaim such a horse. In whatsoever manner he defends himself, bring him back frequently with gentleness (not, however, without having given him proper chastisement if necessary) to the lesson which he seems most averse to. Horses are by degrees made obedient, through the hope of recompense and the fear of punishment. How to mix these two motives judiciously together, it is a very difficult matter; it requires much thought and practice, and not only a good head, but a good heart likewise. The coolest and best natured rider will always succeed best. By a dexterous use of the incitements above mentioned, you will gradually bring the horse to temper and obedience; mere force, and want of skill and coolness, would only tend to confirm him in bad tricks. If he be impatient or choleric, never strike him, unless he absolutely refuse to go forward; which you must resolutely oblige him to do, and which will be of itself a correction, by preventing his having time to meditate and put in execution any defence by retaining himself. Resistance in horses, you must consider, is sometimes a mark of strength and vigour, and proceeds from spirit, as well as sometimes from vice and weakness. Weakness frequently drives horses into viciousness, when any thing wherein strength is necessary is demanded from them; nay, it inevitably must: great care therefore should always be taken to distinguish from which of these two causes any remedy or punishment is thought of. It may sometimes be a bad sign when horses do not at all defend themselves, and proceed from a sluggish disposition, a want of spirit, and of a proper sensibility. Whenever one is so fortunate as to meet with a horse of just the right spirit, activity, delicacy of feeling, with strength and good nature, he cannot be cherished too much; for such a one is a rare and inestimable jewel, and, if properly treated, will in a manner do every thing of himself. Horses are oftener spoilt by having too much done to them, and by attempts to dress them in too great a hurry, than by any other treatment.

It is impossible, in general, to be too circumspect in lessons of all kinds, in aids, chastisements, or caresses. Some have quicker parts, and more cunning than others. Many will imperceptibly gain a little every day on the rider. Various, in short, are their dispositions and capacities. It is the rider's business to find out their different qualities, and to make them sensible how much he loves them, and desires to be loved by them; but at the same time that he does not fear them, and will be master.

Plunging is a very common defence among restive and vicious horses: if they do it in the same place, or backing, they must, by the rider's legs and spurs, firmly applied, be obliged to go forwards, and their heads kept up high. But if they do it flying forwards, keep them back, and ride them gently and very slow for a good while together. Of all bad tempers and qualities in horses, those which are occasioned by harsh treatment and ignorant riders are worst.

Starting often proceeds from a defect in the sight; which therefore must be carefully looked into.—Whatever the horse is afraid of, bring him up to it gently; if you caress him every step he advances, he will go quite up to it by degrees, and soon grow familiar with all sorts of objects. Nothing but great gentleness can correct this fault; for if you inflict punishment, the apprehension of chastisement becomes prevalent, and causes more starting than the fear of the object. If you let him go by the object, without bringing him up to it, you increase the fault, and confirm him in his fear: the consequence of which is, he takes his rider perhaps a quite contrary way from what he was going, becomes his master, and puts himself and the person upon him every moment in great danger.

Before closing this subject, it is necessary to notice the different paces of horses, and which consist of the walk, the trot, the canter, and the gallop. There are, besides, the amble, the running trot, and the airs of the riding-house; but these paces are not natural.

116. *The Walk.*

Few horses can walk well, however easy this pace may appear to be. It is essential to the performance of a good walk, that the fore-legs stand perpendicular and well advanced before the shoulders, that the hind-legs accord with their position, that the back be short, and the haunches and thighs strong and muscular. A late writer on this subject expresses himself thus.

'With all horses that walk firm, fast, and well, the hind-foot oversteps the mark of the fore-foot by some inches; and this arises from the animal being able to use his hind-quarters with freedom, and to advance his hind-legs well under his body, by which the fore-legs are greatly relieved; as the hind-legs, in that case, take more of the weight of the body than they would do when dragged after the animal: the hind-legs, therefore, should stand perpendicular, under the round bone, which is the connecting joint of the thigh and leg with the body. In that case, their flexion and extension will be even and uniform, and the animal will move with much less labour than he would under other circumstances. In the action of the walk, the horse moves his legs separately; that is to say, one after the other. Thus, if he begins with the right, he first raises the right, or off hind-leg, and advances it under his body; but, before the foot reaches the ground, the right, or near fore-foot, is raised and advanced, in order to make room for the hind-foot, which, in middling and slow walkers, alights upon the mark of the fore-foot; but, in good and fast walkers, oversteps it considerably, as has been just observed. As soon as the near fore-foot alights upon the ground, the off, or left hind-foot, is raised; the left, or near fore-foot then rises to make room for the near hind-foot, in the same way as on the other side.

'The walk, therefore, consists of a separate and successive action of all the four legs, beginning with a hind-leg; and in proof of this, the same remark will be found in an old author, "*Borelli de motu animalium*;" who, speaking of the walk, say, "*incipit gressus pede postico.*" He begins the walk with a hind-leg; and this, though it appears unaccountable at a first view, is nevertheless, the fact; because, if the hind-leg were not first advanced, before the fore-leg began its action, there would be no support for the body whilst the fore-leg was suspended in the air; nor could the body be moved forward until the hind-leg had quitted its station, in order to take a new point of support or centre of gravity.

'During the walk, the fore-leg, which is raised in the air, should be for a monent stationary before it reaches the ground. This shews that the body is properly poised, and steadily supported by the other fore leg; in which case, the horse has a greater command of the leg which is in the air, and which he can throw forward to either a greater or less distance, as the nature and surface of the road may require. It is also a great proof of soundness in the feet; for a tender-footed, or what is called a *groggy* horse, cannot stand long upon one leg without pain, and hence arises that short, stiff, and contracted motion, which invariably takes place with horses of that description.'

The utility of good walking is particularly felt in hilly countries; for a long-backed and weak-loined horse, whose fore-legs are badly placed, goes down hills with great difficulty and uncertainty.

The walk, on the average, reaches five miles an hour, though there have been instances of horses walking even six. But beyond the rate of five miles, it generally becomes a shuffling pace, between a walk and a trot, in which the animal walks with his fore-legs, and in some degree trots with his hind-legs.

A horse that walks lightly and freely, moves his head up and down in conformity with the action of his fore-legs. This motion of the head accompanies the motion of the leg; thus, when the leg is off the ground, the head sinks, and rises again when the leg reaches the ground, and so on alternately whilst he is in motion. This nodding of the head has its use, inasmuch as it relieves the muscles of the neck, and takes off that uneasiness which arises from a long continuance of one position, as is so evidently the case with coach-horses that are reined up tight with a gag-rein, and which are constantly throwing their heads up to get relief from such an unnatural confinement.

A horse cannot move his shoulders with freedom, and advance his fore-legs well, if his head is too much confined by the hand of the rider; a tight rein, therefore, should always be avoided. It is a fact worthy of observation, that a horse that walks well generally excels in every other pace; nevertheless, there are sometimes exceptions, as some bad walkers are very speedy in other paces, but this is owing chiefly to the bad management of the rider.

117. *The Amble.*

In ambling, the animal moves two legs on the same side at once. This pace belongs more particularly to quadrupeds that have long flexible spines, such as lions, tigers, and dogs. When a horse, therefore, adopts this pace of his own accord, it is a sign of weakness.

118. *The Trot.*

In a trot, two legs are moved at the same time; for when a near or left fore-leg is elevated, the off or right-hand leg is raised at the same moment. No horse can trot well unless his legs be well placed, and his chest be neither too narrow nor too broad. When it is too narrow, the elbows generally incline too much inwards, and the animal is liable to cross his legs and to cut his knee. On the contrary, when the chest is too broad, the horse is apt to acquire an unpleasant rolling motion.

"In the trot,' says the writer before quoted, 'there is a certain degree of flexion in the knee necessary to safe and quick action; and with a good trotter, that moves the shoulders freely and throws forward his fore-leg, the knee may be seen by the rider advanced beyond the point of the shoulder every time the leg is in the air.

'When the knee is bent too much, and raised too high, there must be a great deal of unnecessary action, and consequently a loss of time. On the other hand, when the leg is thrown out too straight, with the toe pointed. the leg remains stationary for a short period, gaining no more ground than what is acquired by the momentum of the body. The best action, therefore, is when the leg is moderately raised, and the shoulder thrown forward; but the principal source of speed in trotting, as well as in all other paces, is in the hind-quarters. The action of some horses in this respect is extremely beautiful; that is to say, when there is an equal flexion in the hock and stifle-joints. Hence they appear to go as it were, upon springs; but when this bounding motion is carried to an extreme, it constitutes what is called the darting trot, and is never so speedy as the quick repetition of action in the different legs in the less extended trot. Twelve miles in the hour is considered fast trotting; but there are many horses capable of trotting sixteen, and even eighteen, miles within the hour. In these cases, however, of extreme speed, the motion ought not to be considered as a trot, for it becomes decidedly a run, as may be perceived by the legs moving separately and successively one after the other; whereas, in the trot, two are moved at once, namely, a fore and a hind-leg on opposite sides. Horses that are badly formed in their fore-quarters, when pressed in the trot, are apt to strike the shoe of the fore foot with the toe of the hind-foot, making a disagreeable clacking noise, which is called *forging*, and rendering the pace unsafe by the risk of the hind-foot getting locked with the heel of the shoe of the fore-foot; in which case, except the shoe be torn off, the horse must inevitably fall, and with great violence.

'This defect arises from the horse's being unable to advance his fore-leg with sufficient celeriy, so as to get it out of the way of the hind-leg when it is brought under the body; and though it may be prevented in some degree, by good riding, yet it is never thoroughly got rid of, and will always recur when the animal is tired by hard labour.

'In some instances, where a horse is pressed in the trot, he gets into a shuffling pace, between a trot and a gallop; that is, he either gallops with his fore-legs, and trots with his hind-legs, or else *vice versa;* in either case it is a very unpleasant action, and greatly retards the speed.'

Trotting on hard roads, and particularly in frosty weather, is extremely injurious to the legs and feet. Sometimes the concussion is so great as to occasion violent inflammation, producing what is called *founder,* or a sinking of the coffin bones.

119. *The Canter.*

The canter is a pace peculiarly pleasant to the rider, and much easier to the horse than the trot, because the action is divided into three motions. Thus, if the horse leads with the off fore-leg, the feet will come to the ground in the following order of succession: namely, first the near hind-leg; next, the off hind-leg, and the near fore-leg together; and, lastly, the off fore-leg. But, during this alternation, there is a period when three feet are on the ground at once; for instance, two hind-feet and the near fore-foot will be on the ground just prior to the moment when the off fore-foot alights, which having taken place, the near hind-foot rises from the ground, leaving the other three; viz. two fore-feet and the off hind-foot stationary.

In the canter, the horse moves somewhat obliquely, by advancing one shoulder more than the other, in conformity with the leading leg. Thus, if he leads with the right fore-leg, the right hind-leg must follow, and be advanced more under the body than the left hind-leg. By this position, the feet describe a rhomboidal quadrangle, which gives a greater stability to the body during progression, than if the animal moved with an equilateral projection of his limbs.

If the horse leads with his right fore-leg, and follows with the left hind-legs, he is said to canter false. This may be easily felt by the rider, as the body of the animal will move in a tortuous unharmonious manner. Whenever this takes place, he should be stopped immediately, as he incurs the danger of falling.

It is easiest for the rider when the horse leads with the off or right fore-leg, because the rider, holding the reins in the left hand, generally turns his body to the same side, which inclination accords also with the oblique direction of the horse's body. To oblige the horse to lead with the off fore-leg, it will be necessary to shorten the near or left hand rein, and to press the horse's side with the left leg, and to apply the spur if necessary.

By shortening the left hand rein, his head and neck will be inclined to the left or near side, which will confine the motion of his near or left shoulder, and force him to advance the off-shoulder; at the same time, the pressure of the rider's left leg throws off the croup to the right side, and gives the hind-quarters the same direction as the fore quarters. If the horse is required to lead with the left or near fore-leg, the right hand and heel must be employed for that purpose.

The canter is a pace peculiarly accommodating to the sensations of the rider, as his seat is preserved with little or no exertion; whilst, at the same time, the progress he makes is very considerable.

120. *The Gallop.*

The gallop is usually divided into two paces; the hand gallop and the full gallop. The motion however, in both cases is the same, the difference being in the quickness of repetition.

In galloping, the legs all move separately, and come to the ground in regular succession after each other. Hence, the usual mode of representing the horse in painting, with his fore-legs, and hind-legs extended at the same time, is quite erroneous; because the hind-legs are always advanced under the body to receive the weight at the time that the fore legs are extended. Dogs, and other animals with flexible spines, gallop with their fore and hind-legs extended at the same time; but horses are incapable of such motions.

During the gallop, the horse leads with one fore-leg projected beyond the other; and riders, in general, (though there is no very obvious reason for it) prefer the off or right fore-leg to the near or left. But this is all the effect of habit; for, as the body of the horse is obliged to move rather obliquely, and not in a straight line, the rider, for his own ease, is also obliged to sit in the same direction. Hence, after being accustomed to ride a horse that leads always with the same leg, he finds it inconvenient and unpleasant to ride one that leads with the opposite leg; but this, as has just been observed, is entirely the effect of habit.

Every horse, however, should be taught to lead with either leg occasionally, because the leg with which he does *not* lead does more work than the other, by coming to the ground first, and thereby receiving first the shock of the body. Moreover, if the horse is never suffered to change his legs, he acquires a stiff contracted motion on the one side comparatively with that of the other; and therefore, when obliged to change, he goes not only very uneasily to himself, but also to his rider.

During the gallop, it is necessary that there should be an uniformity of action in all the four legs. Thus, if the horse leads with the off or right fore-leg, the right hind-leg should follow; but if the animal leads with the off or right fore-leg, and the left or near hind-leg follows, he is then said to gallop false, and should be stopped immediately, for fear of his legs interfering, and thereby rendering him liable to fall.

Different horses gallop in very different forms. Some gallop very high with their fore-quarter, throwing up their knees as high as their chests, and even higher. This action is peculiar to most foreign horses, particularly the Spanish; and although it adds to the pomp and parade of a war-horse, or a maneged horse, yet it reduces the speed in a very great degree, as well as adds to the labour and fatigue which the animal has to undergo.

The English thorough-bred horse, on the contrary, gallops low, and with his fore-legs nearly in a straight line of elevation; nor are his head and neck much raised beyond the line of his body.—This style of galloping is much better adapted for speed, and is almost universal amongst race-horses; but it requires great muscular power and command of the limbs, to enable the body to preserve this steady and straight line during its progression; for the hind-quarters must be doubled up, as it were, to enable them to clear the ground at the moment when they are thrown forwards under the body. Hence the necessity of the thighs and hocks being well formed; that is to say, that the thigh should be broad and muscular, and the hock broad also, so as to increase the fulcrum, or mechanical purchase in the hock-joint, from whence the spring is principally taken. It must also be evident, that a good conformation is necessary in the fore-quarters, to preserve a proper harmony of action in all the limbs, although instances sometimes occur of horses that are badly formed in their fore-quarters being possessed of great speed. But this casual variation from an established rule may be attributed principally to the animal's being endowed with some peculiar properties in the conformation of his hind-quarters, and furnishes no reason for neglecting to look to the fore-quarters in the choice of a horse for either the road or field.

Some horses, in galloping, change the leading leg whilst they are going on. When they change the fore-leg without the hind-leg, they then gallop false; but when they change both a fore and a hind-leg at the same time, it is a proof of strength, and of great command of their limbs.

121. TRAINING FOR THE CHACE.

It is a rule with the best sportsmen, that no horse should be used in hunting till he is full five years old: some will hunt them at four, but the horse at this time is not come up to his true strength and courage, and will not only fail at every tough trial, but will be subject to strains, and accidents of that kind, much more than if he were to be kept another year first, when his strength would be more confirmed.

When the hunter is five years old, he may be put to grass from the middle of May till Bartholomew-tide; for the weather between these is so hot, that it will be very proper to spare him from work. At Bartholomew-tide, the strength of the grass beginning to be nipped by frosts and cold dews, so that it is apt to engender crudities in the horse, he should be taken up while his coat is yet smooth and sleek, and put into the stable. When he is first brought home, he should be put in some secure and spacious place, where he may evacuate his body by degrees, and be brought not all at once to the warm keeping; the next night he may be stabled up. He ought to be well supplied with good meat, litter, and water, and to be often dressed, and suffered to sleep as much as he pleases. He should be so fed, that his dung may be rather soft than hard; and it must be of a bright and clean colour.

There is a general practice among the grooms, in many places, of giving their hunters wheat-straw as soon as they take them up from grass. They say they do this to take up their bellies; but there seems much reason to disapprove of this. The change is very violent, and the nature of the straw so heating and drying, that there seems great reason to fear that the astringent nature of it would be prejudicial, more than is at first perceived. It is always found that the dung is hard after this food, and is voided with pain and difficulty, which is in general very wrong for this sort of horse. It is better therefore to avoid this straw-feeding, and to depend upon moderate airing, warm clothing, and good old hay and old corn, than to have recourse to any thing of this kind.

When the horse has evacuated all his grass, and has been properly shod, and the shoes have had time to settle to his feet, he may be ridden abroad, and treated in this manner: the groom ought to visit him early in the morning, at five o'clock in the long days, and at six in the short ones; he must then clean out the stable, and feel the horse's neck, flank, and belly, to find the state of his health. If the flank feels soft and flabby, there is a necessity of good diet to harden it, otherwise any great exercise will occasion swellings and goutiness in the heels. After this examination, a handful or two of good old oats, well sifted, should be given him; this will make him have more inclination to water, and will also make the water sit better on his stomach than if he drank fasting. After this he is to be tied up and dressed. If in the doing of this he opens his mouth, as if he would bite, or attempts to kick at the person, it is a proof that the teeth of the curry-comb are too sharp, and must be filed blunter. If after this he continues the same tricks, it is through wantonness, and he should be corrected for it.—Then he is to be rubbed down with the brush, and dusted a second time; he should then be rubbed over with a wet hand, and all the loose hairs, and whatever foulness there is, should be picked off. When this is done, and he is wiped dry as at first, a large saddle-cloth is to be put on, reaching down to the spurring place; then the saddle is to be put on, and a cloth thrown over it that he may not take cold: then rub down his legs, and pick his feet with an iron picker, and let the mane and tail be combed with a wet mane-comb. He should then be mounted, and walked a mile at least to some running water, and there watered; but he must only be suffered to take about half his water at one drinking.

Walk him a little after he is out of the water, then put him to a gentle gallop for a little while, and after this bring him to the water again. This should be done three or four times, till he will not drink any more. If there is a hilly place near the watering place, it is always well to ride up to it; if otherwise, any place is to be chosen where there is free air and sun. That the creature may enjoy the benefit of this, he is not to be galloped, but walked about in this place an hour, and then taken home to the stable. The pleasure the horse himself takes in these airings when well managed is very evident; for he will gape, yawn, and shrug up his body: and in these, whenever he would stand still to stale, dung, or listen to any noise, he is not to be hindered from it, but encouraged to every thing of this kind.

The benefits derived from these airings are numerous; they purify the blood, teach the creature how to make his breathing agree with the rest of the motions of his body, and give him an appetite to his food, which hunters and racers that are kept stalled up are otherwise very apt to lose. An hour or more after the horse is come in from his airing, the groom should give him a wisp of clean hay, making him eat it out of his hand; after this let the manger be well cleaned out, and a quartern of oats clean sifted be given him. If he eats up this with an appetite he should have more given him; but if he is slow and indifferent about it, he must have no more. The business is to give him enough, but not to cloy him with food. If the horse gets flesh too fast on this home feeding, he is not to be stinted to prevent it, but only his exercise encreased; this will take down his flesh, and at the same time give him strength and wind.

After the feeding in the morning, the usual method is to shut up the stable, only leaving him a little hay on his litter. He need be no more looked at till one o'clock, and then only rubbed down, and left again to the time of his evening watering which is four o'clock in the summer and three in the winter. When he has been watered, he must be kept out an hour or two, or more if necessary, and then taken home and rubbed as after the morning watering. Then he is to have a feed of corn at six o'clock, and another at nine at night; and being then cleaned, and his litter put in order, and hay enough left for the night, he is to be left till the morning. This is the direction for one day, and in this manner he is to be treated every day for a fortnight; at the end of which time his flesh will be so hardened, his wind so improved, and his mouth so quickened, and his gallop brought to so good a stroke, that he will be fit to be put to moderate hunting.

In order to strengthen a hunter, when subject to violent and frequent exercise, some recommend to give some old split beans at every feeding with oats; and others think the crumbs of bread made of beans and wheat flour and given once a day, an excellent method for preserving the appetite. The day before the horse is to hunt, it will be found much better to give a little bread with the oats than beans which are rather hard of digestion.

122. Training for the Course.

Much ignorance and prejudice prevails on the subject of training for the course; and many a good horse has been killed or beaten in consequence of the absurd practices too frequently adopted. Old and foolish opinions are now in a great measure exploded; yet most people think it absolutely necessary to prepare horses for the field by the administration of three strong purges. 'There seems,' says a late writer, 'to be some magic attached to the number three; for the animal is always condemned to swallow a third dose, even though the two first may have operated within an inch of his life, and have left him in such a state of exhaustion and debility as would require a considerable time to overcome. Undoubtedly there are many cases where purging is indispensibly necessary to get a horse into condition: but on the other hand, it is equally true that there are thousands of horses which undergo constant and severe labour without any preparation of the kind whatever; and there are no racers nor hunters in such high condition as mail-coach horses, that are well fed and kept in cool stables, and that travel a certain number of miles regularly every day, and these horses are seldom or never purged, except in cases of worms or greasy heels.'

Dr. Bracken, who was a great sportsman and a great enemy to this indiscriminate practice of purging, cites a case of a mare of his own which he had run for six years, having in that time given her only two purges. He also states that she had no medicine whatever during that period, except about the bigness of a pigeon's egg, of cordial ball occasionally, and that she performed as well as most of her neighbours, having won eight plates out of nine every year.

Mr. Clarke, of Edinburgh, also makes some very judicious observations on the abuse of purging medicines. Speaking on this subject he says, 'It may be of use to the young practitioner to explain what is meant by the phrase of the *humours falling down;* but, at the same time, I must inform him, that this phrase is so generally in use, that when a horse's eyes are affected, the humours are said to fall down into them, although they are situated nearly in the most elevated parts of the body. But to explain their falling down to the extremities, I shall take a case that frequently occurs. When a horse that is in the highest state of health, but is too fat and full of juices, and accustomed to stand much at rest, is suddenly put to violent or long continued exercise, his legs will be apt to swell soon after; they will perhaps continue in that state for some time; they may at last break out in running sores about his heels and form cracks, &c.; when in this situation, it is said that the humours are fallen down into the legs. Here a question naturally occurs, where were those humours before the horse underwent this severe exercise, and how came they to fall down on this occasion only? Unless a horse has been gradually habituated to exercise, previous to the undergoing that which is violent or long-continued, his vessels will be too full of fluids: and these, especially the finer capillaries, from the force and rapidity of the circulation during the exercise, will admit the grosser fluids that do not usually circulate in them. They are likewise liable in these cases to be ruptured; hence the fluids they contain escape into the cellular membrane, where they stagnate, and being then out of the course of circulation, occasion a swelling. If this happen in the legs as the most dependent part of the body, the humours are then said to have fallen down; the swelling causes a distension of the skin; the cuticular pores are then enlarged, and admit through them the thinner parts of the fluids to the outward surface of the skin, which, on being exposed to the external air, are then changed in their quality, and acquire, according to circumstances, either a clammy or greasy nature, or else a sharp fetid ichorous quality that erodes the skin, and by lodging there forms small ulcers.

'It ought always to be remembered, that great evacuations weaken an animal body; and if they are repeated frequently and too close upon one another, without allowing a proper interval between each, or if they are carried to excess, as is sometimes the case, the weakness in the animal system is thereby increased, the powers of life are overcome, and death follows of course.'

Farther upon this subject Mr. Clarke says, 'I do not approve of repeating purge after purge, merely because this or that horse is to run, or hunt, without first considering whether the animal be fat or lean, or whether he has been kept at hard meat with proper exercise, or whether he has run a considerable time, or late in the season at grass. All this, and several other circumstances necessary to be attended to, ought to be duly weighed and maturely considered before any purging medicines are administered: for example, if a horse has run long at grass, and is of a plethoric and full habit of body, evacuations by purging, and diuretic medicines, to a certain degree, are necessary, together with length of time, good feeding, and regular exercise, to bring his body into that proper habit to enable him to perform with freedom such active exercises. But if a horse is of a lean low or dry habit of body, whether it may proceed from the want of proper food, from fatigue, or any other cause, can it be proper to reduce him still lower by repeated evacuations of any kind? There is such an inconsistency in this practise, that it would not even deserve to be noticed, were it not too much practised every day; for, with some people it is no matter of consideration with them what state of body a horse may be in, that is, whether he be of a fat and full, or lean and dry habit of body; still he is said to be full of humours, and which must be purged off before he is fit for running or hunting.'

When a horse has undergone the regular purging and the ceremony of taking cordial balls, he is galloped and sweated in his clothes at certain intervals. By this unhealthy system he is relaxed: and when suddenly exposed to cold, he stands all in a heap, with his back up, his legs drawn together, and his tail close to his buttocks, shivering and shaking like an aspen-leaf. Such a horse may be said to be half blown before he begins to start.

Indeed, no horse can be taken up fat from grass, and sweated both suddenly and violently, without producing weakness and exhaustion. A horse thus misused will be all in a lather of sweat before he has run the third part of his race; to the great astonishment of the trainer, who never dreams that it is possible for such an event to take place from *too much*, as well as from too little previous sweating.

Mr. Richard Lawrence recommends that the exercise should be regular, moderate, and of sufficient duration. 'Thus, for instance,' says he, 'the horse might be ridden gently for a few minutes with his clothes on; by which time the circulation of the blood would be so much increased as to resist any ill effects of the sudden application of cold to the body. He might then be stripped, and set off at a canter, or a hand-gallop, for about a mile; then walked for a few minutes, and the cantering repeated and continued in this way alternately for about an hour, taking care that the animal should not sweat beyond a general and moderate moisture of the skin. This portion of exercise should be given him twice a day for the first fortnight or three weeks after he has gone through his physic: and it might afterwards be increased by giving him some strong gallops, in order to practice him in the free use and command of his limbs to the utmost extent of action. By thus sweating, with his body and head and neck uncovered, he will have the benefit of the contact of the fresh air, the vapour arising from the skin will fly off as fast as it is produced, and the vessels will be strengthened and invigorated by the freshness of the passing breeze. If any further reasoning were necessary to shew the bad effects of immoderate sweating in the body clothes, the following analogy might very fairly supply it. It is a fact, which most horsemen and drivers of horses must know, that a horse when going *with* the wind, sweats more than when he is going *against* it; and this simply from the circumstance of his being, in the first case, constantly surrounded by the vapour arising from his own body; whereas, in the latter case, the wind meeting him, drives it away, and with a quickness proportioned to the velocity with which he is going. Hence a horse is always much more fatigued and exhausted when he goes *with* the wind than when he goes *against* it.'

It would certainly be highly improper to start a horse with a full belly; still it is also improper to keep him for several hours on the muzzle before he starts. Long fasting naturally produces faintness. A moderate meal might be given with advantage about four hours before starting.

It is, as before noticed, very improper to water a horse on the training ground, and immediately after to set of on a canter or hand-gallop. Such treatment is apt to produce spasms, with all their fatal consequences. Should a mare, while training, shew a desire for the horse, it will be necessary to give bran mashes and occasionally some Epsom salts; though under such circumstances, it would be better, if convenient for the owner, to decline running.

The violent labour of the race-horse certainly requires some preparation, in order to divest the body of all superfluous fat and fluids, as well as to improve the breathing; but purging and sweating ought to be carefully and judiciously used, and a proper regard should be paid to the constitution of the animal.

‘We have happily got quit,’ says Mr. Scott, in his British Field Sports, ‘of much of the stoving in hot and suffocating stables, and of the excessive and debilitating purgation of former days. Even the malignant and bewitching humours, always supposed to be resident in the body of the horse, have been nearly laughed and exorcised out of it, since the salutary horse-laugh originally raised against them by Gibson and Bracken; and could we but both reason and experiment away the exhausting, enfeebling, spirit-quelling, crippling sweat, we should render our training and running stable system very near to perfection; which indeed already is, with the above stated exceptions, the most correct, maturely considered, and comfortable to the horse, of any other in existence.

In continuation, the same writer says, ‘Speed materially depends on the freshness, elasticity, and healthy tone of the sinews, which one would suppose can scarcely be promoted by a weekly laborious and fatiguing gallop of four or six miles, under a weight, alive or dead, of perhaps fifteen or sixteen stone; the horse not perhaps fairly able to race with twelve—all horses beside, whatever their powers, age, nature, or constitution, being treated in the same way. If there be any satisfactory experimental proofs to invalidate the above arguments, such have not reached me; I have never heard any other plea for the necessity of forcibly reducing running horses to the state of *bone-leanness*, than that of custom and opinion; and to dismiss this par tof the subject, granting that a severe method of training would ensure a somewhat greater superiority of performance, would it not be preferable on all hands to give up such an advantage, if an advantage it can be deemed, for compassion sake in the first instance, and for the considerable benefits of preserving the limbs of the horses in a sound state, and more to be depended upon, and of lengthening the duration of their services?"

123. Training Horses to leap.

It is proper that all hunters and military horses be taught to leap. This should be done gradually and gently, lest the horse falls and becomes fearful. It is best to commence by leading him to a low bar covered with furze, which, pricking the horse's legs if he does not raise himself sufficiently, prevents his contracting a sluggish and dangerous habit of touching, as he goes over, which any thing yielding and not pricking would give him a custom of doing. Many horses, in learning to leap, are apt to come too near, and in a manner with their feet under the bar. The best way to prevent their doing so, is to place under the bar two planks, of the breadth of the pillars on which the leaping bar is fixed: these planks should meet and join at top under the bar, about two feet high from the ground, and project at bottom upon the ground, about two feet; they should be strongly framed, that the horse may not break them by touching them with his feet; the bar should be placed so as to run round when touched. The ditches and hedges to which a horse is first brought should be small and inconsiderable; and in this, as in every thing else, the increase should be made by degrees. The horse should be accustomed to approach the object he is to leap, gently, and without hurry, and to stand coolly at it for some time; and then to raise himself gently up, and go clear over it without either laziness or impetuosity. When he has been taught to leap well standing, he may next be brought to walk up to the bar, and to go over it without halting; and after he has become a little familiar with this practice, he may be led up to it in a trot, and so by degrees quicker and quicker, until he is brought to leap it flying on a full gallop.

In going at a leap, the reins should never be held tight, because the horse cannot rise, or have the free use of his shoulders and fore-legs, except his head be at perfect liberty. Many riders, however, have a notion that a horse's head should be a little held up by the bridle, with a view, as they term it, of assisting him, and directing him how to measure his leap. This is, however, a very mistaken notion, as many riders know to their cost, as it very often is the means of pulling the horse into a ditch. A horse will always learn how to measure his leap, if left to himself, better than when the rider attempts to regulate his motion; because, if his head be held up and constrained by the bridle, he can neither see so well where he is going, nor can he have the free use of his shoulders and fore-legs, both of which are absolutely necessary to enable him to accomplish the leap with ease and safety. Sportsmen, in general, entertain a curious idea, that a horse can extend his leap if he discovers the ditch to be wider than he expected, by taking an additional spring whilst he is going over it. But this is certainly a very erroneous notion; for after the horse has once quitted the ground with his hind-legs, he can neither increase nor diminish the exertion or spring with which he began his leap, because no point of resistance remains for his hind-legs to spring from.

In leaping, it is necessary that the rider should keep his body back; because, by so doing, a great deal of the shock is avoided. The motion of the horse is, in fact, similar to that of a rocking-horse; namely, he first rises with his fore-parts, and ultimately with his hinder ones; therefore, if the rider projects his body forwards at that period of the leap he must inevitably be thrown over his horse's head by the jerk which he receives from the hind-quarters. But, in leaning back, he should not disturb his previous position on the saddle, for the bend should be confined to the loins entirely. His arms should also remain still and close to his sides; and the best way to teach this, and to prevent their being raised up, is to oblige the rider to hold a switch, or a hand-whip, under each arm, and not to let them drop. The thighs and legs should be kept in the same position, without grasping the horse's sides, which only tends to render the shock more violent. It is recommended by some sportsmen to touch the haunch of the horse gently with the whip in passing the bar, in order to make him clear his hinder legs with the address used by the cow, one of the best standing leapers.

The Irish horses are generally good leapers; and these are commonly short in the hind-quarter, and down-rumped, or low in the croup, with their hind-legs standing considerably under the body, and their hocks close together, being what is called cat-hammed.

124. Riding a Race.

The jockey seat on horse-back differs materially in position from that of the riding-school. The latter is preserved by the balance or equipoise of the body solely; the former by the firm grasp of the thighs, and the knees particularly, confirmed by the opposite directions of the knees and toes, the one turned in, the other somewhat outwards, and in a small degree elevated. There must be a concentration of muscular power and energy, in the rider's arms and shoulders, and breast and knees, for the holding and support of his horse. The spine or back-bone of the jockey must always be prepared to bend in the middle; since in the horse's running, there is a necessity for some inclination of the body forward, and nothing can be more awkward and ridiculous than a horseman leaning forward, with a back as straight and stiff as a stake, his posteriors protruded in the same degree. The true seat, is naturally, easily, and upright in the saddle, as in a chair; the knees about as much bent; the legs falling nearly straight down the horse's sides, and the feet home in the stirrups; the hands somewhat above the pommel of the saddle, elbows close to the sides, and the view directed between the horse's ears. Jockey riding is, in truth, something between sitting and kneeling; and the length which a man rides should be so regulated, that he may be as it were, buoyant in his stirrups, without being so much elevated above the saddle as to depend upon the bridle for his support: at the same time, he must not ride so long as to sit a dead weight upon his horse. A man who rides too short, and is elevated too much above the saddle, must necessarily have a vacillating and uncertain seat. Of late years, and since the military mania has bewitched our country, the riding-house mode, of no more than the toe or ball of the foot in the stirrup, has prevailed to a considerable degree. We have seen directions too of late, in print, for the jockey to turn his toe in, and his heel out, *à lá militaire*; as though, like Watty Cockney, it were apprehended he could not otherwise keep his spurs out of the horse's sides: a groundless apprehension in a well-seated jockey, who of the two, will find the greatest difficulty in reaching his horse's side with his spurs.

Chifney recommends riding a racer with a slack rein; but surely it is necessary in most cases, to hold a horse sufficiently close, to keep him together and steady; nor can you otherwise regulate the speed of a horse, to make the most of him. Fairly pulling at a racer, whilst he has the full liberty of extending his head and neck to the utmost, can never obstruct his wind or shorten his stroke; and many horses, from habit probably, will slacken their speed on the rein being slacked.

The rider of the speediest horse will, in course, make a waiting race: that is to say, keep behind at a favourable distance, in order to preserve his horse's superior speed for the last run. The distance must not, however, be too considerable, by which error many races have been lost. For example, in a sweepstakes, where the speediest and best horses have sometimes waited so long on each other, that the rider of an inferior and unnoticed horse has taken the advantage, and advanced so far, that, at last, the best could not overtake him. The speedy horse must be favoured also over heavy ground and up-hill. The opposite directions will, consequently, serve for the slow and stout horse. In making the play, however, which is taking the lead, and especially in a four-mile race, it must be considered that the stoutest racer may be run to a stand-still; therefore the rider must not at first take too much upon his horse, but keep a few pulls in hand for an occasion; yet go along at such a rate as to keep his speedier antagonist at warm work, wearing him out by degrees: in such a race, the stoutest horse will win, unless he is greatly out-footed. In a race of a single mile, or a mile and a half, between a speedy horse, with the common defect of that class, inability to run *up to his foot*, and a stout and honest horse, that will run through the piece, it may be necessary for the rider of the latter to set off *at scores*, and run all the way through, attending only to the single consideration, that he does not blow or burst his horse, of which he ought to be a judge.

It may be proper, in this place, to advert to the distinct qualities in the racer, of *stoutness* and *honesty*, a discrimination seldom made, but to be aware of which may be sometimes of consequence. A horse may be honest without being stout; that is, he may have the will, perhaps the ambition, to run to his last sob, but be deficient in physical power—he faints, he sinks internally; his lungs, his limbs refuse any longer to perform their office with their highest energy, and his pace is compulsively slackened. The stout, but not honest horse, will occasionally slacken his pace, and suffer himself to be beaten without any of the above symptoms, or appearances of debility; perhaps there is some analogy in this case with that of the cart-horse, which, however in general a capital drawer, never will or can draw *dead pulls.* It would be difficult to discuss satisfactorily this point, as it regards the racer; but it may be fairly insisted on, abuse with the whip and spur never succeeds in the case; and, in fact, horses are well known to have their *running days;* and there are so many obvious and constantly recurring impediments to racing exertion, and the edge or extreme of speed is so delicate a thing, that we may well wonder at the degree of certainty which we are accustomed to witness on the course. In whipping the horse, the hand of the rider is elevated above his head, that the strokes may proceed from the extremity of the whip. Spurring is performed by turning the toe outward, and giving quick strokes. In making the last run, it is an object to keep the *whip hand,* and to avoid being hemmed in by the other horses. It is also politic and usual not to win the race *too hollow,* when in the jockey's power, that the extent of the horse's abilities may not be known. The winning by the shortest possible distance is one great and difficult part of the business of the rider.

Here it is necessary to say a few words on *whipping* and *spurring.* The rule with a hot and speedy horse is, to spare whip and spur, and trust to a strong arm and check rein. The stout or lurching horse, which well knows how to spare himself, must be forcibly driven, in order to elicit his utmost performance. There are some styled *good whipped horses,* which absolutely will not run without the stimulus of the whip and spur, and which they take with the utmost *non chalance* and forbearance. But even with these, excess, as in all other cases, defeats its proposed end; and when a horse has reached his utmost possible point of exertion, it is indisputable that all the whipping and spurring which could be administered by the arms and legs of even that butcher on horseback, Jack Oakley, were he now living, could not push him one hair's breadth beyond. There is another material consideration, too little attended to; the effect which severity must have upon a horse in the above-mentioned state—say, for example, upon the stoutest and best whipped horse. Granting that they who use this severity have any rational or reflective motive, it can be no other than to keep the horse up *to his mark.* But surely heart-oppressing and deadening discouragement cannot do this, and despair itself may fail: and the horse confounded, yet still willing to make farther exertion if possible, may be more likely to lift himself up and lose ground, than be able to maintain his stroke.

A true runner may endure the whip and spur in moderation, but has a most resentful and indignant stomach on their abuse, which never fails to make him careless and indifferent in his exertions, and even to abate in his speed the instant abuse takes place.

125. Carrying Weights.

It is generally believed by sportsmen, that even three pounds difference in weight will make a horse win or lose; but it is very difficult to conceive how such a very slight difference can have such influence in the deciding of a race. Were horses always equal in vigour and wind, such nice calculations would be better founded. It is more probable, that the difference in riding amongst different jockies may affect a horse more than a trifling addition of weight; and it is well known, that horses cannot run so well upon some grounds as others. Some horses can run well on a flat that can neither run up nor down hill; and these perhaps are circumstances that require more attention in making a match, than the consideration of a small difference in weight. Besides, some horses, especially small light colts, run faster at two years old than at any other period; whilst others do not acquire their utmost power of speed until three or four years old.

A good judge on this subject expresses himself thus: 'Neither the accustomed weights for the year, nor the give and take weights, seem to me possible to be accomodated to the nature of the case. As examples, perhaps seven or eight pounds only will be given, when the ability to carry weight is strikingly different in the two horses: on the other hand, in give and take weights, a horse of fourteen hands will carry nine stone, and one of fifteen hands eleven. Now nature may have reversed this scheme completely, by having enabled the lowest horse to be master of the greatest weight. Matching with discretionary weights, or weight for age and qualifications, seems susceptible of more accuracy; and perhaps it may be yet discovered, that much more weight may be allowed on account of substance and strength than has been hitherto supposed.'

126. MATCHES AGAINST TIME.

Before treating of matches against time, it may be amusing to notice a few instances of performances that have been timed. The speed of Childers has been before noticed. Eclipse was never timed; but it was judged, or perhaps some persons might look at their watches on the occasion, that he ran four miles over York in eight minutes, carrying twelve stone. He won more twelve stone, or royal plates, than any other racer. Bay Malton ran four miles at York, 1766, with eight stone seven pounds, in seven minutes forty-three seconds and a half. Merry Bachelor, in Jennison Shaftoe's great match, ran twenty-five miles in one hour. Fire-tail, beating Pumkin, ran a mile at Newmarket in 1773, with eight stone, in one minute four and a half seconds; but no horse has hitherto been proved capable of running a mile within a minute of time; nor has it been yet ascertained how many miles a race-horse is capable of running within the hour. Long and distressing races were formerly in use upon the turf, the discontinuance of which is among the number of modern improvements. Even four mile races, or, as it is styled running over the course, are not so frequent as formerly.

The utmost speed of a trotter has hitherto been ascertained, by the stop-watch, to be a mile in a few seconds less than three minutes: and sixteen miles in one hour, upon the common road, with the weight of twelve stone, seems to be the utmost which has been performed with that weight, unless it be a fact that the same was performed in 1792, in Lincolnshire, with fifteen stone. Thirty miles were trotted in two hours and ten minutes; and ten miles upon the Epsom road, in November, 1810, by Mr. Fielder's horse, in thirty minutes ten seconds. The greatest performances in harness, and with a light carriage for the purpose, have been two miles in six minutes and a half, without distress; and fourteen miles and a half in several minutes less than one hour, without distress likewise: this last was by a grey gelding, the property of captain Wombwell of the Guards, which had before trotted sixteen miles in one hour, carrying ten stone; an account of which, with remarks, may be seen in the Sporting Magazine for October, 1816.

Robson's brown mare Phenomena attracted considerable attention by trotting, in July, 1800, between Huntingdon and Cambridge, seventeen miles in fifty six minutes; and afterwards, the same distance in less than fifty-three minutes; when her owner offered to match her to perform nineteen miles and a half within the hour; but the challenge was not accepted. These were doubtless extraordinary performances, but it was not considered, either by the public, or the trotting jockies themselves, how much was to be allowed in the estimation, on account of the light weight she carried, namely, a *feather*, being ridden by a lad belonging to the running stables weighing about five stone.

The pleasing and intelligent author of the British Field Sports, in speaking of the treatment of the horse in a race, says that jockies are frequently under the necessity of cutting up and abusing a horse, utterly in contradiction to their own better judgment and inclination; in many instances to their abhorrence. 'The anecdote,' says he, 'has already been published of the miscreant blackguard who gave the following orders to William Barnes:—"Make him win, or cut his bloody entrails out—mark, if you don't give him his belly full of whip, you never ride again for me. I'll find horse, if you'll find whip and spur!" I saw the little horse, after running three terrible four mile heats, "literally cut up alive," and may I never again witness such a blasted and blasting sight! The old direction, in the last extremity, to spur a horse "in the fore-bowels," as the tenderest and most vital part, is savage, detestable, and stupidly useless.'

'But the chief,' continues this writer, 'of the cruelties in horse-racing, which yet remain to disgust us, are perpetrated in matches upon the road, made, for the most part, by low bred, unprincipled persons, and equally ignorant of the properties and powers of the horse and the nature of racing. Nearly or quite fifty years have passed, since the inhuman sacrifice of the poor old Flea-bitten Grey Horse; but it ought to be held in remembrance, as a mark for stern and unequivocal detestation, and not to be, as it was, smoothed and unctioned over with a shake of the head, and a grave hypocritical countenance, which, if they mean any thing seriously, it is in a doubtful and suspicious way. This excellent animal, a gelding three parts bred, had won a match of twenty-two miles within the hour, upon the Windsor road; but the same match being repeated, he failed, and was whipped in, the last mile, until his entrails trailed after him upon the ground!—attended on each side by furies of hell, in the human shape, expressing in their eyes and countenances the greedy and demon-like thirst of gain, or apprehension of loss!"

A recent author mentions the case of a soap-boiler at the west end of London, who possessed a horse that used to work in his cart, and carry out small loads amongst his customers, and which horse he was accustomed to drive in a gig occasionally. By some accident or other, it was discovered that this horse was possessed of extraordinary speed and bottom; and a lawyer, who, in conjunction with his professional pursuits, carried on a little black-leg amusement, became the purchaser of this animal, and began to turn his powers to account as soon as possible. The first match which he made was to gallop nineteen miles within the hour; and the horse being, to all appearance, a heavy, half-bred animal, and shewing no indications of speed in his external form, great odds were laid against his winning the wager. The horse, however, accomplished the task within the time, to the surprise and discomfiture of the knowing ones. Not satisfied with this performance, his owner matched him again, to go twenty miles within the hour, which he also accomplished; and, shortly after, he was again match-to go twenty-one, but dropped down dead before the conclusion of the last mile.

Since that period, many cases of equal brutality might be brought forward, all tending to shew the habitual barbarity of the inhabitants of this country, towards one of the noblest and most useful animals in the creation. This species of barbarity seems to be almost peculiar to this country; for in no other is the horse urged to extraordinary exertion, except in cases of actual necessity.

127. THE TURF LAWS.

HORSE-RACING.—To prevent the multiplicity of horse-races, the Stat. 13, Geo. II. Chap. 19, directs, that no plates or matches under 50*l.* value shall be run for, on pain of forfeiture of 200*l.* by the owner of each horse so running, and of 100*l.* by such persons as advertise the horse. And though the owners of horses may run them for a stake of 50*l.* and upwards, at such places as are or have been used for horse-races; yet if they run them upon the high-road, or any other place than those prescribed by the statute, the wager is illegal, and they are subject to the forfeitures of the statute.—4 Term Reports, p. 1.

But by an exception in the statute, races may be run at Newmarket and Black Hamilton for any sum or stake less than 50*l.*

Note.—Although matches or horse-races, made according to the provisions of 13 Geo. II. Chap. 19. are legal, yet all bets or wagers above 10*l.* on them are games within the Stat. 9 Anne, chap. 14, and consequently void.—2 Blackstone's Reports, p. 706.

But though the legislature has, in many instances, laid wagering under particular restraints; yet the practice is not restrained by the common law, unless it may become injurious to public economy. And, therefore, all wagers which are not contrary to sound policy in the general interests of the community; or which are not made upon games, or are likely to disturb the public peace, or to encourage immorality, or probably affect the interests, characters, or feelings of others not parties to the wager, are legal, and may be recovered in a court of justice.

128. Laws of Racing.

Horses take their ages from May-day, i. e. a horse foaled any time in the year 1818, will be deemed a year old on the first of May, 1819.

Four inches are a hand. Fourteen pounds are a stone.

Catch weights are, each party to appoint any person to ride without weighing.

Give and take plates are, fourteen hands to carry a stated weight, all above or under to carry extra or be allowed the proportion of seven pounds to an inch.

A whim plate is weight for age and weight for inches.

A post match is to insert the age of the horses in the articles, and to run any horse of that age without declaring what horse, till you come to the post to start.

A handicap match is, A, B, and C to put an equal sum each into a hat; C, who is the handicapper, makes a match for A and B, who, when they have perused it, put their hands into their pockets, and draw them out closed, then they open them together, and if both have money in their hands, the match is confirmed; if neither have money, it is no match. In both cases, the handicapper draws all the money out of the hat; but if one has money in his hand, and the other none, then it is no match, and he that has money in his hand is entitled to the deposit in the hat.

The horse that has his head at the ending-post first wins the heat.

Riders must ride their horses to the weighing-post to weigh, and he that dismounts before, or wants weight is distanced.

If a rider fall from his horse, and the horse be rode in by a person that is sufficient weight, he will take place the same as if it had not happened, provided he go back to the place where the rider fell.

Horse's plates or shoes not allowed in the weight.

Horses not entitled to start without producing a proper certificate of their age, if required, at the time appointed in the articles, except where aged horses are included, and in that case a junior horse may enter without a certificate, provided he carry the same weight as the aged.

For the best of the plate, where there are three heats run, the horse is second that wins one.

For the best of the heats, the horse is second that beats the other twice out of three times, though he doth not win a heat.

A confirmed bet cannot be off without mutual consent.

Either of the bettors may demand stakes to be made, and on refusal declare the bet void.

If a party be absent on the day of running, a public declaration of the bet may be made on the course, and a demand whether any person will make stakes for the absent party; if no person consent to it, the bet may be declared void.

Bets agreed to pay or receive in town, or at any other particular place, cannot be declared off on the course.

At Newmarket, if a match be made for a particular day in any meeting, and the parties agree to change the day, all bets must stand; but if run in a different meeting, the bets made before the alteration are void.

The person who lays the odds has a right to choose the horse or the field.

When a person has chosen his horse, the field is what starts against him, but there is no field without one starts with him.

Bets made in pounds are paid in guineas.

If odds are laid without mentioning the horse before it is over, it must be determined as the bets were at the time of making it.

Bets made in running are not determined till the plate is won, if that heat be not mentioned at the time of betting.

Where a plate is won by two heats, the preference of the horses is determined by the places they are in the second heat.

Horses running on the wrong side of the post, and not turning back, distanced.

Horses drawn before the plate is won are distanced.

Horses distanced if their riders cross or jostle.

A bet made after the heat is over, if the horse betted on does not start, is no bet.

When three horses have each won a heat, *they only* must start for a fourth, and the preference between them will be determined by it, there being before no difference between them.

No distance in a fourth heat.

Bets determined, though the horse does not start, when the words Absolutely, Run or Pay, or Play or Pay, are made use of in betting.

Example.—I bet that Mr. Robinson's bl. horse, Sampson, absolutely wins the king's plate at Newmarket next meeting: I lose the bet though he does not start, and win though he goes over the course alone.

In running of heats, if it cannot be decided which is first, the heat goes for nothing, and they may all start again, except it be between two horses that had each won a heat.

Horses that forfeit are the beaten horses, where it is run or pay.

Bets made on horses winning any number of plates that year, remain in force till the first day of May.

Money given to have a bet laid, not returned, if not run.

Matches and bets are void on the decease of either party, before determined.

129. RULES OF THE JOCKEY CLUB.

1. That the ballots for members of the jockey club shall be in the news rooms, Newmarket, on the Tuesday in the first spring meeting, and the Tuesday in the second October meeting, in each year.

2. That the candidates shall be proposed by members, and their names put up in the card-room, in the meetings preceding the ballots, viz. in the Craven and the first October meetings.

3. That nine members at least be present at the ballot, and that two black balls exclude.

4. To meet annually at dinner the day preceding the king's birth-day.

5. That three members of the jockey club shall be appointed stewards, and to commence their office on the 4th of June annually. One new steward to be appointed every year, on the 3d day of June, by the steward who quits on that day, subject to the approbation of the members of the jockey club then present.

6. The first and second vacancy of the three stewards now named are to be settled by drawing lots; and ever afterwards the senior steward is to quit his office on the 3d of June annually.

7. All stakes shall be made in cash, bank bills, bank post bills properly indorsed, bankers' notes payable to bearer, or bankers' notes payable to order, also properly indorsed; and not otherwise, without the consent of the party or parties present,

concerned in the match, subscription, or sweepstakes, on whose account such stakes are made.

8. All stakes for matches, subscriptions, and sweepstakes, shall be made before starting for the same; and in default thereof by any person, he shall forfeit in like manner as if he had not produced his colt, filly, horse, or mare, to start, and shall have no claim to the stake or stakes of the match, subscription, or sweepstakes, should his colt, filly, horse, or mare, have started and come first: and this to remain in full force, as an established agreement of the jockey club, unless such person has previously obtained the consent of the party or parties present, with whom he is engaged, to dispense with his making his stake as aforesaid.

9. In order to prevent frauds, notice shall be given that if any person make any bet or bets, from signal or indication, after the race has been determined at the post, such person is not entitled to receive, or liable to pay the same; as such bet or bets is or are fraudulent, illegal, and totally void: and that if any servant belonging to a member of the society shall be found to have made, or to have been engaged in the making, any such bet or bets, he shall be dismissed his service, and no farther employed by any member of this society.

10. When any match or sweepstakes shall be made, and no particular weight specified, the horses, &c. to carry eight stone seven pounds each. And if any weight is given, the highest weight is, by this resolution, fixed at eight stone seven pounds.

11. That no person shall be allowed to start any horse, mare, or gelding, for match, sweepstakes, or subscription, unless he shall have paid all former stakes and forfeits to the keeper of the match-book, by eight o'clock in the evening before starting.

12. That the owners of horses, &c. engaged in matches or sweepstakes, in which the forfeits shall amount to 100 guineas or upwards, shall be entitled

to a deduction of ten per cent. if they declare their forfeits by half an hour past nine o'clock in the evening preceding running.

130. DECISIONS OF THE JOCKEY CLUB.

Any disputed matter, submitted to the consideration of the jockey club, must relate to horse-racing. The parties must agree upon a statement of the case in writing, request the opinion of the stewards of the jockey club thereon, and agree to abide by their decision; and such agreement must be signed by the parties. If the dispute should not occur at Newmarket, the reference must come through, or with the sanction of, the stewards of the races where it happened.

Except the case arise at Newmarket, they decline giving any opinion where facts alone are in dispute; such as a complaint of foul riding, &c. All such cases are most effectually investigated on the spot, whilst the matter is fresh in the memories of the witnesses, where their attendance is most easily procured, and their credibility best understood.

All communications must be addressed 'To the Keeper of the Match-book, at Newmarket,' and delivered free of postage.

By order of the stewards.

Newmarket, 16*th May*, 1816.—Some disputes having arisen respecting the qualifications of horses to run for particular races, as well in regard to the time when the certificates should be produced, as to the person by whom the qualification or disqualification should be proved, the stewards of the jockey club, in the hope of introducing a uniformity of practice in this respect, and with a view to prevent disputes, declare it as their opinion, that when the qualification of any horse is objected to before starting, it is incumbent on the owner to produce a certificate, or other proper document, to the stewards, or clerk of the course, before the race is run, to prove the qualification of his horse; and that if he shall start his horse without so doing, he must be considered as disqualified; and farther, that their decisions on all cases referred to them on this point will be regulated accordingly.

By order of the stewards.

CASE I. *July* 4, 1776.

A subscription of 10 guineas each, for hunters, that *never won either plate, match, or sweepstakes,* 12st. each, one four-mile heat, &c. *To be named on or before the* 1*st of April,* 1777, to the clerk of the &c. &c.

The stewards of Newmarket were requested to give their opinion—whether a horse having won a subscription *on the* 23*d of April,* 1777, was qualified to run for the above?

Answer.—The stewards are of opinion, that a horse being duly qualified *at the day of nomination,* is entitled to start. Signed by order, &c.

Case 2.—A, B, and C run for a subscription, the best of heats. A wins the *first* heat, B the *second.* C's rider, after saving his distance the second heat, dismounts between the distance-post and the end, but remounts, rides past the ending-post, and weighs as usual; starts and wins the *third* heat, and weighs, without any objection being made.

A being second the third heat, in a short time afterwards demands the subscription (not knowing till then that C's rider had dismounted), and refuses to start for the *fourth* heat, which B and C run for, and C wins.

Query—Which is entitled to the prize?

Answer.—The stewards are of opinion, that no objection having been made to C's starting for the third heat, C is entitled to the prize. Signed by, &c.

Case 3.—The winner of a plate, whose horse had distanced all the others, applied for the stakes or entrance-money, which was advertised to be paid to the second-best horse that won a clear heat: one of the distanced horses had won the first heat.

Answer.—The winning horse cannot be deemed the second horse, and therefore is not entitled to the stakes, to which the owners of the other horses (being distanced) have also no claim.

Case 4.—For a plate, the horses came in as follows: Question, whether B was entitled to the stakes?

A	2	0	1	1
B (fell)	1	0	2	dis.
C	3	0	0	dr.

It was decided that B, being distanced, was not entitled to the stakes.

Case 6.—A gold cup, &c. for horses that never won:

A	1
B	2
C	3

The owner of B claimed on the ground of A's disqualification, he having the preceding year won a clear heat at Chelmsford, to entitle him, according to their articles, to the stakes or entrance-money.

Answer.—The stewards are of opinion, that A was not disqualified, and consequently is entitled to the cup, &c.—the term 'winner,' they conceive, applies only to the horse that beats all the rest.

Case 6.—An enquiry whether a horse having won a sweepstakes of 23 guineas each (3 subscribers) is qualified to run for a 50*l.* plate, expressed to be for horses that never won plate, match, or sweepstakes, of that value.

Answer, by the stewards of the jockey club,

That it has been the practice, in estimating winnings, to consider the clear sum gained only, and consequently to exempt the stake of the proprietor; the horse, therefore, which had won a sweepstakes of 46 guineas only, viz. two stakes of 23 guineas each, was not thereby disqualified for the 50*l.* above mentioned.

Case 7.—Mr. Baird having entered two horses for the king's plate at Newcastle, in 1793, and won it with Sans Culottes, his other horse not starting—the owner of the second horse objected to his receiving the plate, on the ground that he was disqualified by having *entered* two horses.

The matter being referred to the stewards of the jockey club, by his grace the duke of Northumberland, they determined that Mr. Baird was entitled to the plate.

Case 8.—A betted B that a mare should trot a mile in five minutes, in four minutes and a half, and four minutes, all which it was stated she won with ease; but B measured the distance after the races were over, found it was short of a mile by four yards. The stewards of the jockey club to whom it was referred, determined, that as no objection was made to the measure of the course before starting, and the mare having performed the distance set out, and not objected to, A won all the bets.

Case 9.—In 1799, on a case referred to them, the stewards determined as follows:—'The receiver of a forfeit is not deemed, in our opinion, to be a winner of a race, unless specified to be so by a particular article.'

131. THE ACHIEVEMENTS OF THE HORSE.

This noble and useful animal is highly distinguished for docility and sagacity. His attachment to his master is frequently both warm and dignified. He is proud, and delights in gaudy trappings; and it has been remarked, that horses used in hearses often shake their plumes with a supercilious air. On account of the strength, valour, and utility of this animal, he was formerly an object of adoration, having been worshipped by ancient kings.

The true bred blood horse has performed a variety of feats which no other class of his species can equal. The English racer, as before observed, is derived from Arabian progenitors. The following warranty of the pedigree of a horse, brought from Egypt by colonel Ainsley, is curious, and shews the scrupulosity and precaution of the Arabian breeders.

'In the name of God the merciful and compassionate, and of Seed Mahommed, agent of the high God, and of the companions of Mahommed and of Jerusalem. Praised be the Lord, the omnipotent Creator. This is a high bred horse, and its colt's tooth is here in a bag, hung about his neck, with his pedigree, and of undoubted authority, such as no infidel can refuse to believe. He is the son of Rabbamy, out of the dam Lahahdaha, and equal in power to his sire, of the tribe of Zazalahah; he is finely moulded, and made for running like an ostrich, and great in his stroke and his cover. In the honours of relationship, he reckons Zalicah, sire of Mahat, sire of Kellac, and the unique Alket, sire of Manasseh, sire of Alsheh, father of the race down to the famous horse, the sire of Lahalala. And to him be ever abundance of green meat and corn, and water of life, as a reward from the tribe of Zazahalah, for the fire of his cover; and may a thousand branches shade his carcase from the hyæna of the tomb, and the howling wolf of the desert; and let the tribe of Zazahalah present him with a festival within an enclosure of walls; and let thousands assemble at the rising of the sun, in troops hastily, where the tribe holds up under a canopy of celestial signs, within the walls, the saddle with the name and family of the possessor. Then let them strike their hands, with a noise incessantly, and pray to God for immunity for the tribe of Zoab, the inspired tribe.'

'It is a circumstance generally known,' says Mr. W. H. Scott, 'that bred, or race-horses, from the solidity of their bones, and some peculiar intrinsic force or power in their muscular and fibrous systems, are capable of carrying, and with expedition, far heavier weights in proportion than the northern or native horses of Europe. And I have seen the late Mr. Bullock, then riding nearly or altogether twenty stone, cantering over the London pavements upon a little thorough bred horse, under fourteen hands in height, and which, to common observers, was not equal to more than half the weight. Was a thirty stone plate to be run for, at twenty mile heats, the prize would be carried off by thorough bred horses, of which we have always, in this country, possessed some of great size and powers. I was not, however, aware that the power of standing under the greatest weight, between the racer and the common horse, had ever been actually put to the test, until I lately read the following curious evidence of the fact, in a letter from the Rev. William Chafin to a friend:— "Captain Vernon, some time after Amelia was out of training, laid a very considerable wager, that she bore a greater weight upon her back, without cringing, than a certain miller's horse, which had been used to carry heavy sacks all his life time. The mare and the horse were placed side by side, on the even ground, and bags of different sizes, whether of corn or sand I know not, but I believe the latter, were placed on their backs with great precaution. The mare never moved; but after immense weight had been placed on both, the horse began to sidle, and before the last bag could be put on him, he sunk on his knees; it was put on the mare, and she bore it, never moving her posture until she was unloaded. An immense sum of money was lost and won in this trial." Amelia raced, I believe, about sixty or seventy years ago, was the best mare of her year, and a great winner at Newmarket; and Mr. Chafin had the above account, about a week after the trial had been made, from the father of the present Sir John Lade, an eye-witness. The particulars are in all probability to be found in one of Cheney's, that is to say, the earliest Racing Calendars; but such experiments by no means deserve the countenance of sportsmen, being in their very nature barbarous, and almost unavoidably likely to be productive of irreparable injury to the victims of them. There is a deception in the appearance of the bred horse, particularly in the bone, which, from the fineness of the skin and smoothness of the hair, does not show bulk so prominently as the bone of the horse of a coarser breed; and there are many cart-horses which cannot stand in competition with some of our racers, for size of the leg bone below the knee. Sampson, the sire of Bay Malton, measured eight inches and a half round the smallest part of his fore-leg, and nine inches round the same part of his hinder leg.'

All racing transactions and information relative to the turf are comprised in the annual Racing Calendar, published by Messrs, Weatherby, of Oxendon-street, London. These Calendars commence in 1727. Pick's Calendar, published at York, Gard's Guide to the Turf, Bodger's prints of the Newmarket Courses and Exercise Ground, and the General Stud Book, are also useful to Sportsmen. According to the Calendar for 1753, there were then in England seventy courses in which regular annual races were held, and one in Scotland, and sixteen covering stallions advertised. In 1777, ninety-one courses in England, three in Scotland, and eleven in Ireland, and eighty-nine stallions advertised. In 1816, eighty-two courses in England, three in Wales, nine in Scotland, six in Ireland, and fifty-seven stallions advertised to cover in England. It is probable that the most flourishing period of the turf may be deemed that between the years 1766 and 1784.

The Darley Arabian, standing at the head of our racing pedigrees, was, according to scattered remnants of tradition, a horse of good substance, finely formed, inclining to the deep or blood bay, and nearly or altogether fifteen hands in height. He was sent from Aleppo, perhaps towards the end of queen Anne's reign, by Mr. Darley, of a sporting family in Yorkshire, at that period a mercancile agent in the east, and belonging to a hunting club at Aleppo, where he made interest to purchase this horse, doubtless, from all concurring circumstances of evidence, a real *Courser of the Desert*, and of the ancient and pure blood. He was kept by Mr. Darley as a private stallion, covering very few mares but those of his proprietor; indeed as Arabians had been long out of repute in the English breeding studs, such consequence was to be expected, and a variety of the best bred mares of the country were not annually poured in upon him, as afterwards, in consequence of his great success, upon the Godolphin Arabian. His first get, however, was a true and successful racer; and from this Arabian have descended the speediest and largest coursers that ever outstripped the winds, in striding and springing over the earth. Flying Childers and Eclipse, the swiftest of quadrupeds, were the son and great grandson of this stallion, from which also, through Childers and Blaze, descended Sampson, the most powerful horse which ever raced, whether before or since his time; of first-rate speed as a racer, and in form entitled to equal pre-eminence as a hunter, hack, or coach-horse. The Darley Arabian was the sire of Flying, or the Devonshire Childers, Bleeding or Bartlet's Childers, Almanzor, Whitelegs, Cupid, Brisk, Dædalus, Skipjack, Manica, Aleppo, Bullyrock, Whistlejacket, Dart, and others, some of them out of mares of no great repute.

Flying Childers was bred by Leonard Childers, Esq. of Carr house Doncaster, and sold to the duke of Devonshire at three years old; and according to a contemporary writer, his grace afterwards refused for the horse his weight in silver, which probably would have amounted to five or six thousand pounds, a vast sum for a horse at that time. He was said to be vicious, which seems to be indicated by his countenance and manner, according to his portrait; and, like Eclipse, he was a resolute and headstrong horse. No horse in his time could run within a distance of him over the course. In form, he was short backed and compact, his length to a considerable degree being made up in his legs, not, according to general estimation, the most advantageous shape for a race-horse; but Childers was a horse above ordinances, superior to the ordinary rules of form, by which others of his species seem to be bound: there do not appear in his portrait that depth and slant of shoulder which we have seen in Eclipse. Childers probably did not race until six years old, and never any where but at Newmarket; and there is an old and probable tradition current in Yorkshire, that his extraordinary speed and powers were first discovered at a severe fox-chase, in which all other horses in the field were knocked up. In colour he was bay, with white upon his nose, and whited all fours, namely, upon his pasterns, the white reaching highest upon his near fore-leg and his hinder leg. His head, although well joined to his neck, and his muzzle fine, was rather thick over the jowl. He was foaled in 1715, and his pedigree is as follows:—Son of the Darley Arabian out of Betty Leedes, by old Careless; grandam, own sister to Leedes, by Leedes' Arabian, which was the sire of Leedes; great grandam by Spanker, out of the old Morocco mare, Spanker's own dam. Old Careless, sire of the dam of Childers, was got by Spanker out of a Barb mare. Spanker was almost all Barb. Thus we see the pedigree of Childers runs very much *in and in*, that is, his progenitors were bred from the nearest affinities. Never was there a more complete racing pedigree, all the progenitors, to the last, having proved their blood by successful racing or breeding racers, and all of the best blood, Arabian or Barb. In October, 1722, Childers beat lord Drogheda's chaunter, previously the best horse of the day, six miles, ten stone each, for one thousand guineas. He had already, at six years old, ran a trial against Almanzor and the duke of Rutland's Brown Betty, nine stone two pounds each, over the round course at Newmarket, three miles, six furlongs, and ninety-three yards, which distance he ran in six minutes and forty seconds; to perform which he must have moved eighty-two feet and a half in one second of time, or nearly after the rate of one mile in a minute; the greatest degree of velocity which any horse has ever shewn, or probably ever will. He likewise ran over the beacon course, four miles, one furlong, one hundred and thirty-eight yards, in seven minutes and thirty seconds, covering at each bound a space of twenty-five feet. He leaped ten yards on the level ground, with the rider on his back.

The Godolphin Arabian was about fifteen hands in height, with good bone and substance; in colour a brown bay, mottled on the buttocks and crest, but with no white, excepting a small streak upon the hinder heels. All the old engravings give him the high and swelling crest which has been so much noticed in Stubbs's picture; there is also the same sinking behind his withers, and assinine elevation of the spine towards the loins. His muzzle was so remarkably fine, that he might well (a favourite idea of the old jockeys) have drank out of a tumbler. He was truly snake-headed, which is to say, his head was perfectly well set on. His capacious shoulders were in the true declining position, quarters well spread; and of every part materially contributory to action, nature had allowed him an ample measure; in his *tout ensemble* there appears the express image of a wild animal, or horse of the desert, and of one at the first view, perfectly adapted from his form to get racers. He was sent to France, from some capital or royal stud in Barbary, probably from Morocco; and it was suspected he was stolen; but so little valued that he was actually used to draw a cart in the streets of Paris. It is not known that he had any pedigree, but a notice was sent over with him, that he was foaled in the year 1724, most probably in Barbary.

This horse was not imported by Mr. Coke, as has been supposed, from Barbary, but from France. Mr. Coke gave him to Mr. Williams, master of St. James's coffee-house, who presented him to the earl of Godolphin. Being most likely out of condition, and not shewing himself to advantage, he was kept on the noble lord's stud, as Teaser, to Hobgoblin, during the years 1730 and 1731, when that stallion refusing to cover Roxana, she was served by the Arabian, and the produce was a colt foal, afterwards named Lath, which proved not only a most elegant and beautiful horse, but the best racer which had appeared upon the turf since Flying Childers. The Arabian covered during the remainder of his life, in the same stud, producing yearly a succession of prodigies of the species. He died in 1753, in his twenty-ninth year, and his remains were deposited in a covered passage leading to the stable, a flat, thankless stone, bare of any inscription, being placed over him.

The following famous racers, some of which were of great size and power, besides many others of inferior note, with a great number of capital racing and blood mares, descended from the Godolphin Arabian:—Lath, Cade, Regulus, Babram, Blank, Dismal, Bajazet, Tamerlane, Tarquin, Phœnix, Slug, Blossom, Dormouse, Skewball, Sultan, Old England, Noble, the Gower Stallion, Godolphin colt, Cripple, Entrance. The sums put in circulation, by the numerous descendants of the above two racing stallions, have been immense.

Smolensko, the property of Sir Charles Bunbury, which, during his racing career, excited a greater share of the public curiosity than any of the most famous of his predecessors, in 1813 won the two great stakes in the Newmarket Spring Meetings, immediately afterwards the Derby Stakes at Epsom, and the Magna Charta Stakes at Egham in the following August. It was even betting for the Derby, between Smolensko and the field; and an unfortunate gentleman backing the field to a large amount, had not sufficient firmness of mind to bear up against the consequence of his own imprudence. A few days, however, before the race, a report getting abroad that the horse was lame, and he being seen without one of his shoes, Sir Charles Bunbury took and won five and six hundred pounds to ten, three times over. The betting soon returned to its former state. At this time the newspapers were filled with Smolensko, and he was by them represented as the speediest horse which had appeared since Eclipse, and 'unlike Eclipse only in his coolness and want of driving.' All the world went to Epsom to witness the performance of this new Eclipse. On his return to London, he was ordered from Tattersall's for the inspection of his royal highness the regent. Many persons were desirous of purchasing this horse, and there seems no doubt that four or five thousand pounds might have been obtained, had the proprietor been desirous to part with him. On the approach of the Egham meeting, the public papers were again full of Smolensko, and a turnpike man upon the road declared that, in twenty years, he had not seen such crowds pass his gate of carriage company, horse, and foot, the latter of all descriptions, and all for the purpose of getting a sight of the famous black horse. Many had come eighteen or twenty miles on foot, returning through the gate till two o'clock in the morning. Crowds gathered round him on the course, and he was then exhibited to her majesty the queen and the princesses on the royal stand. A man actually offered Sir Charles Bunbury two hundred pounds for the use of his horse, to make a show of; and there is no doubt but that Sir Charles, could he have done such a thing, might have made five hundred pounds by exhibiting him in London! Among the curious tattle at Egham, on the subject of this wonderful horse, it went about that the day before the race he had been stinted of his meat and water, according to the old system; most probably a *hoax* of the groom, by way of answer to some sage enquiry: it, however, reached the ears of Sir Charles, who remarked to his informant, that should a servant of his make so gross a breach of his orders, 'he would never eat any more of his beef and pudding.' It was reported Sir Charles challenged all England, offering to take four pounds, and run his horse against any horse of his year, his horse not to take a sweat. Smolensko was one of the healthiest, quietest, and best tempered horses that ever was trained. He is about sixteen hands and a half high, full brother to Thunderbolt, got by Sorceror, a son of Trumpator, and his pedigree is filled with our oldest and highest racing blood.

Goldfinch, by Lop, the property of John Turner, Esq. acquired great celebrity as a hunter in the Mershem or Jolliffe Hunt. Sharke, got by Marsk, his dam by Snap, grand-dam by Marlborough, brother to Babraham, out of a natural Barb mare, was renowned for his performances, which were deemed greater than any other horse's in England. At three years old he beat Postmaster for five hundred guineas: he received from Prior two hundred guineas. He won from Jacinth three hundred guineas, at four years old (April 17, 1775): he won a sweepstakes, ten subscribers, two hundred guineas each; and another, thirteen subscribers, one hundred guineas and a hundred of claret each: also the Clermont cup, value one hundred and twenty guineas, and one hundred guineas each; and a sweepstakes, thirteen subscribers, twenty-five guineas each. He won five hundred guineas from Cincinnatus, and beat Johnny (six years old) for one thousand guineas, when five years old. He again beat Postmaster for one thousand guineas, and won a sweepstakes, three subscribers, one thousand guineas each. He beat Rakes for one thousand guineas, and won of Leviathan five hundred guineas (July 8). He received from Critic one thousand guineas, from Johnny five hundred, and beat Fireaway for three hundred guineas. At six years old, he walked our B. C. for one hundred and forty guineas: he received from Leviathan five hundred guineas, and again beat Leviathan for one thousand guineas, and Hephestion for five hundred guineas. He won ninety-two guineas for all ages when ten horses started. He received one hundred guineas compromise from lord Grosvenor's Mambrino; and, when aged, he beat Nutcracker a mile.

Tramp, a bay horse, foaled in 1810, was bred by Richard Watt, Esq. of Bishop Burton, near Beverley, Yorkshire; got by Dick Andrews, and his dam (bred by lord Egremont) by Gohanna, which was also the dam of Scamp. At Malton, April 6, 1813, Tramp won a sweepstakes of fifty guineas each, beating Mr. Grimstone's Dulcinea, by Sancho, and Sir M. M. Sykes's Diabolus: on the same day, he won a sweepstakes of twenty guineas each, (one mile and a half) beating Mr. Morris's Luna, by

Stamford, and Mr. Dalrymple's Tomboy. At Beverly, June 2, he won a sweepstakes of twenty guineas each (one mile and a half) beating Mr. Harrison's Latona, Sir B. R. Graham's Bacchante, and Sir M. M. Sykes's br. c. by Sancho. At York spring meeting, 1814, he won the gold cup, value two hundred and twenty guineas, (three miles) beating Viscount (five years old), Shepherd's Boy (three years old), and Mexico (four years old). At Beverley, May 26, he won the gold cup, value one hundred and thirty guineas, (four miles) beating Woodman and Sir. B. R. Graham's b. c. On the next day he beat Silston for 50*l*. At York August meeting, he was beat with great difficulty for one of the great subscription purses by Prime Minister, but beat Hocuspocus and Cameleopard. At Pontefract, September 14, he won the gold cup, value one hundred and twenty guineas, (four miles) beating X Y Z (six years old) and Marcianna (five years old). At Doncaster, September, he was beat for the Fitzwilliam stakes by Catton, but beat Cossack, Ranger, and Fairville. This was one of the finest races ever seen, and won with the greatest difficulty. The next day he won the prince's stakes of twenty-five guineas each, with twenty-five guineas added, (six subscribers) beating Hocuspocus by Quiz, Molineux, by Hambletonian, Don Carlos, by Sir Charles, and Rodrigo, by Sancho; and on the following day, he won the gold cup, value one hundred guineas and upwards, beating lord Fitzwilliam's Cameleopard, Mr. Blake's Sprightly, and Sir W. Milner's Mamoune.

Tramp was beat twice when three years old, which, with the above, constituted the whole of his racing. The noted John Jackson rode him for all these races except the cup at Doncaster, when James Garbutt rode, owing to the former being above weight.

Viscount, got by Stamford, dam by Bourdeaux, was bred by J. W. Childers, Esq. of Cantley, near Doncaster, Yorkshire, and foaled in 1809. In 1812, he won at Durham 70*l.* for all ages, three miles heat, at three heats, beating Heliantha, Ravedine, Query, and John Hutchinson. At Nottingham, he won the members' plate of 50*l.* three years old colts, at three heats, one mile each, beating Tom Tit, Raspberry, and a colt by Orlando. At Pontefract he won the cup, value one hundred and sixty guineas, beating Don Julian, Biscuit, I'm-sure-he-sha'nt, and Euryalus. At Doncaster, he was purchased by Sir William Maxwell, for eight hundred guineas, and won the 100*l.* for three years old, two mile heats, beating, at three heats, Legerdemain, Skip, Hermit, Navigator, Fitz Oliver, Kid, Young Delpini, Wisdom, and Sir Hedworth. In 1813, at Catterick Bridge, he won a stakes of twenty guineas each, two miles, (eight subscribers) beating X Y Z, Rebecca, and lord Belhaven's colt. At Durham, he won the cup, value one hundred and twenty guineas, three miles, beating X Y Z, Wrodman, Limblifter, Engraver, and Don Carlioso. At Stockton, he won the cup, value one hundred guineas, beating Macaroni. At Preston, he won the gold cup, value one hundred guineas, with two hundred guineas in specie, beating Catton, Uncle Dick, Manuella, and Cwrw. At Pontefract, he won the cup, value one hundred and forty guineas, beating X Y Z. At Doncaster, he won the prince's stakes, of twenty-five guineas each, with twenty-five guineas added, beating Langold. Next day he won the cup, value one hundred guineas and upwards, beating Marcianna, Fugitive, Amadis de Gaul, Oriana's brother, and duke of Leeds's b. c. In 1815, he won fifty guineas at the Caledonian hunt and Dumfries races, at two heats, three miles each, beating Surveyor, Arabella, and Drouthy Kate.

Viscount was a superior runner at four years old, till he met with an accident, which caused firing necessary, after which he lost his racing powers.

Langton was bred by John Grunston, Esq. of Neswick, near Beverly, Yorkshire, and foaled in 1802. He was got by Precipitate, and his dam (who also bred Alonzo, Charlotte, &c.) by Highflier. At Malton Craven Meeting, 1805, he won a sweepstakes of twenty guineas each, beating Truth, Sir Reginald, Laura, Norval, and two others. At Doncaster, he won 100*l.* beating, at three heats, Master Betty, Cleveland, Young Chariot, Scampston, and Sir Andrew: he also received forfeit from lord F. G. Osborne's Don Felix, and was sold to Mr. Howorth. At Bibbury, 1806, he won a sweepstakes of twenty-five guineas each, with one hundred guineas added by the club, (nine subscribers) beating Pedestrian and Bagatelle. At Oxford, he won the cup of eighty guineas, beating Quiz and Rumbo. Next day he won, at two heats, two miles each, fifty guineas, beating Pantaloon. At Egham, he won a stakes of twenty guineas each, (five subscribers) beating Candidate. At Newmarket Craven meeting, 1807, he won two hundred guineas, beating Rosabella. First spring meeting, fifty guineas, beating Charmer. Second spring meeting, he received one hundred guineas from Pagoda. Second October meeting, he received forfeit from Briscio, and was then sold to lord Jersey. At Newmarket July meeting, 1808, he won fifty guineas, beating Ned. In the Houghton meeting, he won a stakes of one hundred guineas each, (three subscribers, beating Tot and Bramble. The same day he beat Romeo for fifty guineas. The next day he won 50*l.* beating York, Prospero, Rambler, Cerberus, Pelisse, Hedley, Momentilla, Weaver, and another. In the July meeting, 1809, he received forfeit from Podagra. He won 50*l.* beating Vanity and Norah. He received forfeit from Woodwill, that beat Juniper, for one hundred guineas, and received forfeit from Preek. In the Craven meeting, 1810, he won the third class of the Oatlands (fourteen subscribers), beating Bulrush, Trump, Metevra, Hylas, Thorn, Cecilia, Black Diamond, Æsculapius, Little Preston, and Sir Edward. In the first spring meeting, he won the gold cup, value eighty guineas, the remainder in specie, (fourteen subscribers) beating Invalid, Gundy, and several others. First October meeting, he won the trial stakes of ten guineas each, beating Norval, Burleigh, Deceiver, Benvolio, &c. In the Craven meeting, 1811, he beat Deceiver for one hundred guineas. In the first spring meeting, 1812, he won fifty guineas, beating Bustler and Illumination; and he beat Discount for one hundred guineas.

Cardinal York, a brown horse, foaled in 1804, got by Sir Peter Teazel, his dam charmer, and bred by Edward Ellerker, esq., of Hart, Hartlepool, Durham, was bought at Mr. Ellerker's sale of the stud at Doncaster, for two hundred and fifty guineas. At York Spring meeting, 1807, he won the twenty guineas stakes, for three years old colts one mile and three quarters, (ten subscribers) beating Hylas, Grey Knowsely, Whitenose, Windle, Rossington, and Sir H. T. Vane's b. f. by Phenomenon. In the York August meeting, he won a sweepstakes of thirty guineas each, twenty guineas forfeit, for three years old colts, beating Comrade, and lord Darlington's colt, by Archduke. In the Newcastle upon Tyne meeting, 1808, he won a sweepstakes of twenty guineas each, for four years old colts, four miles, (five subscribers) beating Oran and Sylvio. He won the king's purse of one hundred guineas, four miles, beating Ranger. He also won the gold cup, value one hundred guineas, with forty guineas in specie, three years old, four miles, beating Harmless, Cramlington, Smasher, Mark Antony, and

Lysander. In 1809, he won 62*l.* 12*s.*, four miles, beating Little Fanny and Cramlington. He also won the king's purse of one hundred guineas, beating Mowbray; the gold cup, value one hundred guineas, with forty guineas in specie, four miles, beating Julius Cæsar and Cramlington. This was a very great betting race, and the friends of Julius Cæsar lost their money to a considerable amount.

At Richmond, Cardinal York won the gold cup, value one hundred guineas, with forty guineas added, four miles, beating Mowbray, Rosette, Swiftsure, Ceres, and Lingadel. This was a very fine race, and won with great difficulty. It was the last time of his appearing in public as a racer.

X Y Z, got by Haphazard, her dam by Spadille, was bred by Ralph Riddell, esq., of Felton Park, Morpeth, Northumberland, and foaled in 1808. In 1811, X Y Z won the gold cup, value one hundred guineas, and fifty guineas in specie, at Newcastle upon Tyne, beating Engraver, Rover, and Penelope. In 1812, at the same place, he beat Merryfield for the four years' stakes, of twenty-five guineas each; he won the gold cup, value one hundred guineas, and forty guineas in specie, beating Benedict and Geranium. At Doncaster he walked over for a match of three hundred guineas, against Mr. Hipkins's Yellow Blossom. At Richmond he won the gold cup, value one hundred guineas, with 39*l.* 10*s.* added, beating Phantom, Cwrw, Merryfield, Helianthа, Salamanca, and Viscount. At Durham, in 1813, he won 70*l.* at three heats, beating Tilbury. At Newcastle upon Tyne, he won 50*l.*, beating Macaroni, Marksman, and Pigeon. The same week he won the gold cup, value one hundred guineas, and seventy guineas in specie, beating Sligo, Agnes Sorrel, and Epicure. At Ormskirk he won the Loyalty gold cup, value one hundred guineas, and ninety guineas in specie, beating Don Julian. At Richmond he won the cup, value one hundred guineas, and forty-three guineas added, beating Hocuspocus, Algernon, Trajan, and Rodrigo. Next day he won two heats, three miles each, (seven subscribers) a stake of ten guineas, with 50*l.* added, beating Algernon, Catherine, and Cwrw. In 1814, X Y Z and Catton ran a dead heat, two miles and a quarter, for a stakes of twenty-five guineas each (six subscribers); after the dead heat, the former received a compromise, and the latter walked over. He won the gold cup, value one hundred guineas, and sixty guineas in specie, beating Biddick and Sir C. Monck's bay colt. At Lamberton he walked over for the gold cup, worth one hundred guineas, four miles. At Richmond he won the gold cup, with forty-four guineas, beating Biddick, Crownprince, Hocuspocus, and Tempest. In 1815, he broke down in running for the gold cup, at Newcastle upon Tyne, against Biddick.

Catton, a bay horse, foaled in 1809, got by Golumpus, his dam Lucy Gray, by Timothy, was bred by Messrs. W. Horsely and S. King, whose property he was till 1811, having been then sold to the earl of Scarborough. In the York August meeting, 1812, he won a sweepstakes of fifty guineas each, for three years old colts, two miles, (nine subscribers) beating Langold, Boadicea, Euryalus, Zigzag, and Don Carlos. In the York spring meeting, 1813, he ran second to sligo, for a sweepstakes of twenty guineas each, two miles, beating Geranium, Langold, Mowbray, Otterington, and Casloff. At the same meeting he ran second to Sligo for the Constitution stakes of twenty guineas each, beating Geranium, Otterington, Fugitive, Salamanca, Mr. Gascoign's b. c. by Sancho, duke of Leeds' b. f. by Beningbrough, and Sir M. M. Sykes's sister to Prime Minister. Next day he won 70*l.* at two trials, for all ages, three miles, beating Navigator, Manuella, and Mr. Brade's b. f. by Diamond. This was easily won.

At York August meeting, Catton won the king's purse of one hundred guineas, four miles, beating Otterington and Knight Errant. At Doncaster he won a sweepstakes of fifty guineas each, (six subscribers) beating Algernon. Next day he won the hundred pound purse at two heats, two miles, beating Ploughboy, Mr. Garforth's g. f. by Sancho, lord Belhaven's b. c. by Master Robert, and Diabolus. This was easily won.

In the York spring meeting, 1814, Catton ran second to Cannon-ball for the constitution stakes, of twenty guineas each, for all ages, one mile and a quarter, beating Mr. Vernon's b. c. by Newcastle, Catherine, and Viscount. At Newcastle he ran a dead heat with X Y Z, as before mentioned, for the Northumberland stakes, of twenty-five guineas, for all ages, two miles and a quarter, (six subscribers) beating Agnes Sorrel, and Lobo. After the dead heat Catton walked over. In the York August meeting, he won another of the great subscription purses of 277*l.* 10*s.*, four miles, (thirteen subscribers) beating Skip. Next day he won another of the great subscription purses of 277*l.* 10*s.*, four miles, beating Epperston and Woodman.

At Doncaster Catton won the Fitzwilliam stakes, of ten guineas each, with twenty guineas added, (seven subscribers) beating Tramp, Cossack, Ranger, and Fairville. He also won the stakes of ten guineas, with twenty guineas added, four miles, (thirteen subscribers) beating Fugitive and Mr. T. Duncombe's b. c. by Chance. This was easily won.

At York spring meeting, 1815, Catton won the gold cup, value one hundred and fifty guineas, with thirty guineas in specie, three miles, beating Rosanne, Mr. Garforth's grey f. by Hambletonian, and Marciana. Won in a canter. Next day he won the Constitution stakes of twenty guineas each, (fourteen subscribers) beating William, and Miss Cannon (sister to Cannon-ball). At York August meeting he won a subscription of twenty-five guineas, two miles, (eleven subscribers) beating Altisidora and Viscount. He also won one of the great subscription purses of 277*l.* 10*s.* beating Altisidora. At Doncaster he won the gold cup, value one hundred guineas and upwards, beating Everlasting, Marciana, Fulford, Legacy, and Fugleman. He also won the Doncaster stakes of thirty guineas, with twenty guineas added, (thirteen subscribers) beating Altisidora.

In 1816, at York spring meeting, Catton won the gold cup, value one hundred guineas, with twenty guineas in specie, beating Fulford, King Coil, Arcot Lass, Mr. Garforth's gr. c. by Camillus, and Everlasting. At Newcastle he won the gold cup, value one hundred guineas, with thirty guineas in specie, beating Shepherd. At York August meeting, he won the subscription purse of twenty-five guineas each, (eleven subscribers) beating Sir M. M. Sykes's b. f. by Camillus, and the duke of Leed's b. c. by Orville. He also walked over for one of the great subscription purses of 277*l.* 10*s*, four miles; and won the Doncaster stakes of ten guineas each, with twenty guineas added, (thirteen subscribers) beating Dinmont. He started only once after, and was beat by Rasping.

Partisan, a bay horse, foaled in 1811, won a great deal of money. Whalebone, foaled in 1807, won several stakes, and was sold at Mr. Ladbroke's sale, in 1814, for five hundred and ten guineas. Biddick (already mentioned) obtained some prizes, and was purchased by colonel Whaley, having been bred by Mr. W. Edwards. Blucher, a bay horse, foaled in 1811, was remarkable for his achievements; also Whisker, foaled in 1812, *cum multis aliis*

One of the most fortunate and remarkable horses now upon the turf is Doctor Syntax, the property of Ralph Riddell, Esq. of Felton, in the county of Northumberland, but bred by Mr. Knapton, of

Yorkshire. The Doctor was got by Paynator, dam by Beningbrough, and grandam by Carbuncle. He has won no less than twenty cups, besides large sums in cash.

The following is a statement of the number of winners and the prizes won by the stock of many of the present fashionable blood-horses:—

By Waxy (son of Pot-80's), aged 30, 167 winners, won 64,454*l.* 15*s.* and nine cups.

Sorceror (son of Trumpator), aged 24, 162 winners, won 74,769*l.* 14*s.* 10*d.* and five cups.

Haphazard (son of Sir Peter Teazle), aged 23, 56 winners, won 15,964*l.* 14*s.* and fifteen cups.

Popinjay (son of Buzzard), aged 23, 20 winners, won 9163*l.* 11*s.*

Walton (son of Sir Peter Teazle), aged 21, 91 winners, won 45,526*l.* 16*s.* and thirteen cups.

Orville (son of Beningbrough), aged 21, 109 winners, won 40,773*l.* 14*s.* and fourteen cups.

Selim (son of Buzzard), aged 18, 83 winners, won 28,606*l.* 7*s.* 6*d.* and three cups.

Grosvenor (son of Trumpator), aged 18, 13 winners, won 7956*l.* 15*s.* and three cups.

Hedley (son of Gohanna), aged 17, 16 winners, won 3941*l.* 2*s.* 6*d.* and two cups.

A singular instance of the courage of a race-horse occurred during the race for the members' plate, at Salisbury, August 17, 1814. Mr. Radcliffe's Speculator, shortly after starting, broke down; notwithstanding which, although he had nearly two miles to run, and gave the filly Amanda forty pounds, after a severe struggle he ran a dead heat with her.

In December, 1815, lord Carmarthen, son of the duke of Leeds, whilst hunting with his father's hounds in the neighbourhood of Hornby Castle, Yorkshire, leapt a brook which was bank full; and on being measured the next day from hind-foot to fore-foot, it was twenty-six feet nine inches. His grace, though known to be a superior horseman, did not venture over it; neither did the huntsman nor whipper-in, nor indeed any other person in the field. Lord Carmarthen was on Philippic, an excellent hunter, which, when two years old, was one of the most speedy horses of his age.

'About twenty-five years ago,' says Mr. Lawrence, 'an Irish horse, for a wager, leaped over the wall of Hyde-park, close to the gates at Hyde-park corner. The height of the wall on the side on which he rose was six feet, and on the other side eight. The horse was about fifteen hands high, without any thing remarkable in his general appearance. He was led up to the wall till within the distance of half a dozen yards, when he was turned loose. In going over it, however, he knocked off a brick with his hind-leg; and a dispute arising from that circumstance, he was brought round again to the same place, when he cleared it in the most perfect manner at the second time of trial.

'This leap, considering the great height of it, and its taking place over such a hard and unyielding substance as a brick wall, appears almost incredible; but the author can vouch for its being a fact, from having been an eye-witness on the occasion.'

132. Hints on Coach-driving.

The pace called passaging ought to be carefully taught to carriage-horses, as it enables them to turn with facility, and prevents them from treading on their cornets whilst crossing their legs. It is also essential to teach them to back with facility. Every sensible animal, whether man or horse, would suppose that the whip was used to increase the speed of the horse; but what must he think when he is whipt to make him stand still! The horse must be acute indeed that can make any distinction, when the same means are employed to make him go on and also to stand quiet.

The custom of reining the head up so high with the gag-rein as is the common practice, has a very pernicious effect on the animal, especially if he is thick in his throat at the setting on of his head to his neck; for it occasions such a pressure on the jugular veins as almost to stop the circulation of the blood from the head, and very probably contributes, in a great degree, to produce most of these diseases of the eyes with which coach horses are affected. It also, by raising the head so high, throws the fore-quarters out of the line of draught, and consequently deprives the horse of the means of applying his strength mechanically to the best advantage; independently of the uneasiness and pain which it produces in the bones and muscles of the neck, by keeping them confined to one posture for such a length of time. Hence, when coach-horses reined up in this manner are standing in the street, it may generally be observed that they put out their fore-legs as much as possible, so as to lessen the angle between their necks and their fore-quarters.

But the greatest evil to which carriage-horses are exposed takes place in the mode of harnessing them to stage-coaches; and such is the danger attending it, that very few travellers would hazard their lives in those vehicles, were they at all sensible of the risk to which they are exposed. The evil alluded to is the practice of driving the wheel-horses without a brichin, in which case all the weight of the carriage in going down hill is resisted by the collar only; and when it is considered that all the pressure is acting upon the end of the neck, close to the withers, and consequently pulling the horse downwards towards the ground; and when it is also considered, that the major part of the horses used in stage-coaches are lame or tender in their feet, and scarcely able to support even their own weight, how-much must the danger be increased when the weight of three tons is pressing against them down a hill covered with loose gravel, or uneven in its surface. But independently of the danger of the animal being thrown down, all the weight before mentioned is resisted only by a small leather strap, which buckles the harness together at the upper part of the collar, and which, in case of its breaking or becoming loose, would let the hames fly asunder, and the horse would be immediately overrun by the carriage, and the consequences of such an accident may very easily be calculated. But, strange as it may appear, all this danger is incurred every day, merely because the coachman considers a brichin to be old-fashioned, and beneath his taste and dignity.

In stage-coaches, the swingle-tree bars, as a judicious writer remarks, are fixed in the middle, and are moveable in all directions; but some of the sapient coachmen who drive them seem determined to counteract this benefit, by fixing the inside traces of the two leaders across each other, and attaching them to the opposite bars, so as to prevent their lateral motion altogether. The danger of driving stage-coach horses without brichins has been before observed, and the legislature would do well to enforce the use of them, in regard to those vehicles, by inflicting a heavy penalty for the omission. The circumstance of fixing the swingle-tree bars to the end of the pole is also not without danger; for the pole is set so horizontal and low at that end to which the bars are attached, (for the purpose of its being in the same line as the traces of the leaders), that when the wheel horses are in the act of stopping the carriage, or of resisting its pressure when going down hill, they must pull the end of the pole upwards, at the great risk of loosening it or breaking it in the socket; and the consequences of such an accident may be easily calculated, when the horses would be overrun by the carriage without the possibility of stopping it. A very considerable degree of danger is also attached to the present mode of hanging stage-coaches. Formerly they were suspended by a perpendicular spring at each corner; but the present system is to fix them with horizontal springs under the body.

In the former mode, when the wheels were going on the side of a road, and were consequently in a slanting or oblique position, the body still preserved its perpendicular direction by the swinging of the braces, and therefore did not incline sideways at the roof, as is the case when it is fixed upon springs bearing only on the centre; for whenever the carriage is going with one wheel higher than the other, the body is not only obliged to take the same direction, but absolutely hangs over more than the wheels, in consequence of its meeting with no support at the sides; and there is certainly a peculiar providence protecting these vehicles, when all these circumstances are taken into consideration.

Drivers commit a cruel error who force their horses to trot up a hill in order to gain time, and whip them when near the summit in order to increase their speed. Were they allowed a few moments for the recovery of their wind, they would proceed with greater ease and rapidity upon level ground. In stage and mail-coaches it is seldom that four horses are equally matched in speed and wind! and the consequence generally is, that an inferior horse, when yoked with stronger animals, is completely knocked up, and not unfrequently drops down dead on the road. Many coachmen have also a bad habit of pulling up suddenly when on the gallop: such an improper practice exposes the joints of a horse to the risk of dislocation, or even to fracture the bone.

The brutality of some coachmen, but particularly carmen, is notorious, and deserves the severest reprehension.

On this subject Mr. Scott justly remarks, that 'the debates on lord Erskine's late bill, with its unmerited fate, place this enlightened country in no enviable point of comparative view with the rational philanthropy of the ancients. This award is too well and too sadly confirmed by our universal conduct towards animals, the horse beyond all others, in our mode of treating which justice and humanity bear no part, convenience and interest being all in all. Indeed, what numbers are there among us, whether of jack ass drivers, gentlemen, nobles, princes, priests, deacons, and bishops, who can entertain no conception of the grounds or propriety of sentiments like these. How often have we heard of a man or woman, decked out with a great name, and surrounded by a splendid equipage, from a mere contemptible and farcical affectation of consequence, driving with a rapidity by which the heart-strings of some of the poor horses which draw them are burst! Such instances are too common as well as atrociously shameful. And that which places our character in another point of view, which I need not define, the above conduct seems not to be held inconsistent with the *beauty of holiness* and an exalted reputation for piety. How often do we see the aged and crippled steed, worn out in the service of opulence, consigned for the miserable remainder of his life to the most painful and laborious drudgery, perhaps, in the end, to death by actual starvation. I have seen a noble old grey coach horse of the highest form, which had been worn out in the service of my *lord bishop*, beating the rounds of the London repositories, and enduring all the tortures of the real hell of Smithfield, condemned at last painfully to finish his career in a sand-cart. I have known racers of high fame the winners of thousands, administering through their best days to the luxury and profligacy of their masters, in their old age sold for a trifling sum, and turned adrift to the same pitiless fate. It is not here intended to inculcate a principle to a punctilious and impracticable excess, but to recommend the exercise of a practicable and expedient general humanity; and the above examples of modern barbarism inevitably intruded themselves in a discussion concerning distant ages, which we triumphantly style *barbarous.*'

133. DIRECTIONS TO TRAVELLERS ON HORSEBACK.

During a journey it is impossible to avoid accidents, and it is prudent to be always prepared against them, for it is not always practicable to procure assistance or proper medicine when wanted. A few plain directions how to proceed in such cases are here subjoined.

134. *Loss of a Shoe.*

If a horse ascidentally lose a shoe, the rider must adopt an easy pace till another can be provided; and if the foot be injured by gravel, nails, or thorns, it must be properly searched.

135. *Wound in the Foot.*

If the foot be recently and slightly wounded, a little oil of turpentine poured upon the part, and set fire to with a hot poker, is commonly a present cure, without any other application.

136. *Injury of the Coffin-bone.*

If the coffin-bone be affected, apply

Tincture of benzoin,	-	1 ounce.
Spirit of turpentine,	-	half an ounce.

Of the following mixed oils, one ounce and a half, viz.

Egyptiacum,	-	-	-	4 ounces.
Spirit of turpentine,	-		-	4 ounces.

When put into a large pot, that will hold three or four times the quantity of the whole, add,

Oil of vitriol,	half an ounce.
Nitrous acid,	1 ounce.

Mix these with the two first articles, by a little at a time, and immediately add,

Spirit of wine,	8 ounces.

Mix the whole carefully together, and put them in a bottle for occasional use.

137. *Grease in the Heels.*

As horses are subject to greasy heels, the rider, on a journey, should have the following ointments:

Common turpentine,	1 pound.

Melt it over a slow fire, and add,

Alum, in fine powder,	1½ pound.
Bole armenic, in powder,	2 ounces.

Mix the whole together till cold, and when to be used, spread it on strong brown paper, apply it over the part that greases, and bandage it on with listing. Once dressing is in general sufficient to perform a cure, if not, repeat it when occasion requires.

138. *Strains and Bruises.*

In case the horse be injured by a strain or a bruise, rub on the affected part the following mixture:

Camphor,	half an ounce.
Oil of turpentine,	1½ ounce.
Spirit of wine,	2 ounces.

If the strain be of old standing, the following liniment may be used:

Camphor, - - -	half an ounce.
Oil of origanum, -	2 drachms.
Soft soap, - - -	2 ounces.
Spirit of wine, - -	4 ounces.

Mix,

This remedy is also useful in spavins, windgalls, and indurated swellings. Or, if preferred, use the following ointment:

Strong mercurial ointment,	4 ounces.
Camphor, - - -	half an ounce.
Oil of rosemary, -	2 drachms.

139. *Saddle-galls.*

In case of a sore back, arising from the friction of the saddle, apply,

Camphor, - - -	2 drachms.
Oil of rosemary, - -	1 drachm.
Oil of elder, or hog's lard,	3 ounces.

Mix.

Whatever diversity of opinion may exist respecting the political opinions of Mr. William Cobbett, none will deny his ability as a writer, and his skill as a farmer. This gentleman strongly recommends the liquor of the wild mallows for wounds of this description. His words are, 'I cannot help mentioning here another herb which is used for medical purposes. I mean the wild mallows. It is a weed that has a leaf somewhat like a scallop. Its branches spread upon the ground. It bears seed which the children call *cheeses*, and which they string upon a thread like beads. This weed is perhaps amongst the most valuable of plants that ever grew. Its leaves stewed, and applied wet, will cure, and almost instantly cure, any cut or bruise or wound of any sort. Poultices made of it will cure sprains, as those of the ancle: fomenting with it will remove swellings. Applications of the liquor will cure the wringings by saddles and harness. And its operation, in all cases, is so quick that it is hardly to be believed. Those who have this weed at hand need not put themselves to the trouble and expence of sending to doctors and farriers upon trifling occasions. It signifies not whether the wound be old or new. I gained this piece of information upon Long Island, from a French gentleman who was one of Bonaparte's followers in captivity, and who was afterwards robbed of three hundred dollars on board an English frigate, never having been able to obtain either remuneration or redress. The hospitality showed him by me was amply repaid by this piece of knowledge. The mallows, if you have it growing near you, may be used directly after it is gathered, merely washing off the dirt first. But there should be some always in the house ready for use. It should be gathered like other herbs, just before it comes out in bloom, and dried and preserved just in the same manner as other herbs. It should be observed, however, that, if it should happen not to be gathered at the best season, it *may* be gathered at any time. I made a provision of it in the month of October, long after the bloom and even the seed had dropped off. The root is pretty nearly as efficacious as the branches; and it may be preserved and dried in the same manner. We all know what plague and what expence attend the getting of tinctures and salves, some of which very often prove injurious rather than otherwise. I had two striking instances of the efficacy of the mallows. A neighbouring farmer had cut his thumb in a very dangerous manner, and, after a great deal of doctoring, it was got to such a pitch that his hand was swelled to twice its natural size. I recommended the use of the mallows to him; gave him a little bunch out of my store, it being winter time, and his hand was well in four days. He could go out to his work the very next day, after having applied the mallows over night. The other instance was this: I had a pig: indeed it was a large and valuable hog, that had been gored by the sharp horn of a cow. It had been in this state two days before I knew of the accident, and had eaten nothing. My men had given it up for lost. I had the hog caught and held down. The gore was in the side, and so large and deep that I could run my finger in beyond the ribs. I poured in the liquor in which the mallows had been stewed, and rubbed the side well with it besides. The next day the hog got up and began to eat. I had him caught again; but, upon examining the wound, I found it so far closed up that I did not think it right to disturb it. I bathed the side over again; and in two days the hog was turned out and was running about along with the rest. Now, a person must be almost criminally careless not to make provision of this herb. Mine was nearly two years old when I made use of it upon the last mentioned occasion. It is found every where, by the sides of the highway, and therefore may be come at and possessed without either trouble or expence. A good handful ought to be well boiled and stewed in about a pint of water, till it comes perhaps to half a pint. It surely is worth while, especially for mothers of families to be provided with a thing like this, which is at once so safe and so efficacious. If the use of this weed were generally adopted, the art and mystery of healing wounds, and of curing sprains, swellings, and other external maladies, would very quickly be reduced to an unprofitable trade.'

140. *The flatulent Colic.*

In travelling with a crib-biting horse, or one that is often attacked with the flatulent or spasmodic colic, it will be proper always to have ready the following, viz.

Opium,	1 drachm.
Camphor,	1½ drachm.
Powdered ginger,	2 drachms.
Castile soap,	3 drachms.

Which may be easily dissolved in strong beer, or peppermint water, and given as a drench.

We shall add, in this place, a few domestic remedies, which may be employed when medicines cannot be procured in time. 1st, A pint of strong peppermint water, with about four ounces of gin, and any kind of spice. 2d, A pint of port wine, with spice or ginger. 3d, Half a pint of gin diluted with four ounces of water, and a little ginger. This complaint may be sometimes removed by warm beer and ginger, or a cordial ball mixed with warm beer.

Great caution should be used in distinguishing the *flatulent* from the *inflammatory colic;* as in the latter, the above remedies would be highly pernicious.

141. *Coughs.*

Constant harassing coughs may be much relieved by the following emollient drink:

Opium,	1 drachm.
Castile soap,	2 drachms.
Camphor,	1½ drachm.
Oil of aniseeds,	20 drops.

142. *Fatigue.*

When a horse, particularly an old one, is much fatigued, medicines which gently stimulate the stomach, and increase its digestive powers, will prove beneficial. Mr. White says, 'Cordials have an excellent effect when the animal has been fatigued with a long run, or a severe journey, refusing his food, and seemingly exhausted. A *good* cordial preparation at such times restores the appetite, promotes digestion, and renovates the strength and spirits. I do not mean, however, that the *cordial balls* commonly made up have this useful property. On the contrary, they often do harm, but most commonly they are quite inert; for example, Bracken's cordial, which is the receipt generally used, has a considerable proportion of sulphur, and other useless drugs, in its composition.

143. *Over-heat.*

The following drink will be found very useful:

Tincture of benzoin, - -	1 ounce.
Friar's balsam, - - -	1 ounce.
Aromatic spirit of ammonia,	1 ounce.

Put them in a bottle for occasional use.

This is a very useful drink for horses that are overheated in hot weather, and will be considerably improved by the addition of

Prepared kali, - -	2 drachms.
Fresh powdered ginger, -	1 ounce.

To be given in a quart of cold water.

In the winter season, or at any other time of the year, when the horse has not been over-heated, this drink may be given in a pint of warm ale, for the colic, or gripes, and flatulencies in the stomach or intestines.

144. *Inflamed Eyes.*

Horses on a journey are frequently attacked by an inflammation in the eyes, which may be removed by the following applications:

Extract of saturn, -	1 tea-spoonful.
Camphorated spirit, -	2 tea-spoonsful.
Elder-flower water, -	half a pint.

Mixed. Or,

Vitriolated zinc, - -	1 drachm.
Water - - - -	1 pint.

Mixed.

145. *Febrile Affections.*

When symptoms of fever appear, a rider should administer the following useful drink:

Cream of tartar,	1 ounce.
Turmeric,	1 ounce.
Diapente, in powder,	1 ounce.

Mix and give it in a pint of warm gruel; to be repeated once or twice a day, or oftener if necessary. Though simple, it may be given in most kinds of fevers, and will generally be attended with success.

In an inflammatory fever, give the following drink:

Tartar emetic,	1 drachm.
Prepared kali,	half an ounce.
Camphor,	1 drachm.

Rubbed into powder, with five drops of spirit of wine.

To be given every four hours, or three times a day, in a pint of water gruel.

The following is also strongly recommended, viz.

Camphor,	1½ drachm.
Nitre,	4 drachms.
Calomel,	20 grains.
Opium,	20 grains.

Syrup, enough to form the ball for one dose.

Or,

Emetic tartar,	1½ drachm.
Compound powder of tragacanth,	2 drachms.

Syrup, enough to form the ball for one dose.

It is, however, necessary to remark, that no medicine will avail much in fever, particularly when violent, if bleeding be neglected.

In febrile complaints, accompanied with costiveness, or in slight cases of grease, no medicine is better or safer than castor oil, one pint of which may be given for one dose. An experienced farrier recommends three or four onces of common salt, well dissolved in water-gruel, with eight ounces of linseed oil. He adds, 'Though we have prescribed linseed oil, there is no doubt that castor oil is preferable: but this cannot always be procured readily; and as many may object to the expence of it, where the disorder is but trifling, linseed oil may on such occasions be substituted. Salad oil is still better. We have recommended common salt, in preference to Glauber's and Epsom salt, because it is more certain in its effect, and may be given in smaller doses.'

Here it may also be proper to observe, that nothing is more useful as an article of diet for sick or convalescent horses than water-gruel, provided it is properly made; and as this is seldom done, we shall give the best method of making it. Take of fine and sweet oatmeal, four ounces; water, two quarts. Put the water over a slow clear fire to boil, and mix the oatmeal gradually with as much cold water as will make the mixture quite liquid. Add this to the water over the fire before it gets very hot, and continue to stir the whole till it boils. The gruel is then made, but may be improved by letting it simmer some time longer over a slow clear fire; for horses are very nice, and perhaps would not touch it if in the least smoky. Should the gruel be too thick, add warm water.

146. *Weariness.*

Mr. White says, that 'fermented liquors, such as beer, porter, or wine, have been often given with great advantage, in cases which required cordials. I have often seen horses that have been so fatigued with a long chace or journey as to refuse their food and appear quite exhausted, wonderfully refreshed by taking a cordial ball in a pint or more of beer, and feed soon after with great alacrity. The advantage thus derived is not merely temporary, as they are by this treatment rendered adequate to another chase or journey much quicker than they would otherwise be. I once gave,' continues this writer, 'six ounces of brandy, diluted, with the best effect, to a horse that was once done up in a journey: it enabled him to continue it, without any apparent inconvenience.'

147. *General Observations.*

Previous to employing a horse on a journey, it is necessary that he should be in the best state of health and vigour; and if he be fat and sleek, and unfit for vigorous exertions, he must be brought into condition, after which it is not probable that any medicine will be necessary, as he will then bear much, and retain his health and spirit. In bringing an over-fed horse, or one that has just come from grass, into good condition, give the following diuretic alterative powder:

Yellow rosin, powdered,	6 drachms,
Nitre, - - -	half an ounce.

Mix for one dose, to be given daily.

Or,

Flower of sulphur, -	half on ounce.
Liver of antimony, -	half an ounce.
Nitre - - -	3 drachms.

Mix for one dose, to be given daily.

This, with occasional mashes and regular exercise, will tend to prepare a horse for the severest exertions. But such medicines are not to be used if the animal be in good health; they are only recommended in cases where he is too fat, and not prepared for actual service.

If a horse be not properly prepared for a journey, it frequently happens that he is knocked up on the very first day's travelling, and never recovers it thoroughly to the end of his journey. A horse may be said to be in the best condition for a journey when he is rather lean than fat, and when his flesh feels hard and firm, particularly his crest, or that part that lies just below the withers. His coat should be sleek and shining, and his skin loose. The condition of a horse must evidently be of importance in such circumstances; as in a journey he has many inconveniences and evils to encounter, such as bad roads, a successive change of stables, bad qualities of food and water, and very generally imperfect grooming.

The stuffing of the saddle should be carefully examined, that it be not hard, or in lumps, or too thin; in which cases the pressure will be partial and the back be galled. The horse should be shod three or four days before he begins his journey, that the sense of compression and tightness, which the feet always experience on being newly shod, may have gone off. The feet should be cleaned out and washed every night, with a picker; and the usual inflammation will be prevented, and the feet cooled, by stopping them with wet clay or cow's dung. His legs and body should likewise be thoroughly cleaned.

It is a good practice to ride very gently the last mile or two of the stage, that the animal may become cool and tranquil by degrees. It is also proper to give him about a quart or two of water just before coming in. This cools and freshens his mouth. When arrived at the inn, he may be fed with a small feed of oats mixed with a few beans. The beans will tempt a delicate horse to eat. The traveller should be careful that his horse has been thoroughly cleaned, which may be ascertained by examining the flanks. If the legs be swelled after a hard day's work, it will greatly relieve them to bandage them at night with a flannel roller dipped in water. In travelling, the old adage should never be forgotten, that, 'the master's eye makes the horse fat.'

Should a horse, after being cleaned and dried, break out into a profuse sweat in the stable, he should immediately be stripped and rubbed, or led out into the cool air for a few minutes, in order that the vessels of the skin may contract. Horses on a journey suffer great inconvenience in stables at inns, from various causes, such as the narrowness of the stalls, the rising of the pavements, and the filthy state of the racks and mangers, which ostlers frequently neglect to clean. The worst of these inconveniences arises from the narrowness of the stalls, which often prevents a weary horse from turning himself, lying down, or stretching his legs. In some stables the horse is tied up with a hempen halter: this is very dangerous, and should never be permitted.

During a journey in the summer season, it is advisable to travel early in the morning, and to bait for three or four hours in the middle of the day. This practice refreshes a horse more than frequent baitings at short stages, by which much time is lost without any benefit to the animal.

Immediately after harvest, horses are exposed to the evil of being fed with new oats, which produce a general relaxation of the system. To lessen this effect, a few split beans ought to be mixed with the oats, and a cordial ball given occasionally. Carrots are also a pleasant and nutritious diet, especially to horses that are kept constantly on hard and dry food.

Every spring and autumn, the horse moults or sheds his coat, and which is always attended by a certain degree of debility, but principally so in the autumn. At this season, therefore, the horse, when travelling, should be carefully guarded against colds, and should never be ridden into ponds or rivers, or washed with cold water. Many horses are killed by ill treatment at this period. In order to prevent disease while moulting, the horse should be worked moderately, well nursed, and fed on rich boiled food, or with potatoes and carrots and good hay with old grain broken in a mill. After this the animal, without medicine, will turn lively and vigorous, and retain his health and spirit during the severest weather or the most laborious exercise.

DISEASES OF CATTLE.

HAVING considered the veterinary art as far as it relates to the diseases of horses, we will now proceed to the treatment of other domestic animals, both in health and disease. It is much to be regretted that the supineness of veterinary surgeons, and the prejudices of farmers, have combined to retard this branch of useful knowledge, and to preserve the use of the most absurd and expensive remedies, as they are improperly called. The loss which farmers sustain, from the improper treatment of cattle when diseased, is immense, and, could the whole be calculated, would excite general surprise and attention.

It is much to be lamented, that few men of requisite knowledge and experience have written on this subject. The receipts usually recommended are perplexing from their number; useless, or rather pernicious, from the heterogeneous ingredients they contain; and far too expensive for general use. Uneducated farmers are fond of mystery in medical matters; and the more absurd and expensive the receipt, the higher opinion they have of its efficacy. 'It should be considered,' says Mr. John Lawrence, in his able Treatise on Cattle Medicine, 'that animals, living in a state of nature, regulated by the reason and experience of man, would be almost wholly exempt from disease; that their appetites, unlike our own, may be held under a constant control; that their diseases result purely from the negligence or erroneous treatment of their owners. They are either exposed too much to the rigours and changes of the weather, or they are gorged with food, denied a sufficient quantity, or supplied with such as is unwholesome. Here we learn the chief causes of their maladies. LEARN TO PREVENT THEM, instead of undertaking the tedious, unsuitable, and hopeless task, of learning to cure them. Of all things, let the proprietors of cattle renounce for ever the insane folly of offering premiums for curing *incurable* diseases, and the hope of providing medicines which, by a sort of miraculous operation, will enable men to continue in the habit of exposing their animals to the constant risk of such diseases. I have no infallible receipts to offer; on the contrary, I wish to impress my readers strongly with the idea, that all *infallible receipts are infallible nonsense.*'

In addition to these excellent remarks, Mr. J. White says, 'almost all the diseases of cattle arise either from exposure to wet and cold weather, from their food being of a bad quality, or deficient in quantity, or from being changed too suddenly from poor unwholesome keep to richer pasture. It is necessary to observe also, that the animal is more liable to be injured by exposure to wet and cold, when previously enfeebled by bad keep, old age, or any other cause, and particularly when brought from a milder and more sheltered situation. I have scarcely met with a disease that is not attributed, by those who have the care of cattle, to a chill; and under this impression, the most stimulating medicines are usually employed; among which we generally find grains of paradise, ginger, long pepper, and mustard, in *large* doses. It unfortunately happens, that the disorders arising from a *chill* are often of an inflammatory nature, and require a very different treatment. It must be granted, however, that cattle more frequently require stimulating medicines than horses: and that bleeding is not so often required, nor can it be carried to such an extent in the former as in horses; particularly in milch cows. Many of the medicines, of which their *drinks* or *drenches* are composed, are quite inert, some are nearly so, and others are very nasty. Hog's dung, stale urine, and a pint of the animal's own blood, mixed with salt, are generally held in high estimation.'

The foolish, expensive, and dangerous medicines prescribed in Clater's 'Every Man his own Cattle-doctor,' and in Downing's 'Treatise on the Diseases of Horned Cattle,' must have ruined and destroyed many a valuable animal. These books are written in the old style of quackery, and display the grossest ignorance of the subject, which is attempted to be concealed under a multitude of unintelligible words.

1. Inflammation of the Lungs.

Symptoms.—This disease generally begins with shivering, loss of appetite, and a striking appearance of anxiety or depression; but the most distinguishing symptom is an increased motion of the flanks, or quickness of breathing. The pulse is more frequent than natural; but small, and not easily felt. On lifting the upper eye-lid, its under surface will be found unusually red, sometimes approaching to orange colour. If the disease happens to a milch cow, she soon loses her milk; and the ears, legs, and horns are generally cold.

Causes.—this disease most commonly occurs to working cattle, from over-exertion; or from being put into a stall, or suffered to drink largely of cold water, immediately after working hard, and when in a state of perspiration. It may arise also from exposure to cold and rain, or from sudden changes of weather; it is to this latter cause, indeed, that the greater part of the internal diseases of cattle may justly be attributed. It is highly necessary, therefore, to have shelter yards, sheds, or inclosures, where cattle may be occasionally protected from the inclemencies of the weather. Such accommodation is absolutely indispensable for such as may be attacked by this or any other internal complaint; without it, medical treatment will avail nothing.

Cure.—Early bleeding is the grand remedy in this complaint; but it must not be done sparingly. A cow or ox in tolerable condition may lose from four to six quarts with advantage: and if the symptoms do not abate in four or six hours, the operation should be repeated to the extent of three or four quarts, unless the animal faint; whenever this occurs, on any occasion, the bleeding must of course be stopped. Faintness, however, when the disease is really inflammation of the lungs, is by no means an unfavourable effect of bleeding: it is a proof that the operation has been carried to its full extent, and a recovery is more likely to happen. A large seton should be put in the dewlap, and moistened with oil of turpentine; and the sides should be well rubbed with the following embrocation:—

Flour of mustard, - -	4 ounces.
Oil of turpentine. - -	2 ounces.
Water of ammonia, - -	2 ounces.

The whole to be mixed with as much water as will bring it to the consistence of cream.

Immediately after the bleeding give the following drink:—

Camphor, - - -	2 drachms.
Nitre, - - - -	1½ ounce.
Powdered carraway seeds,	1 ounce.

To be given in a pint of gruel.

Should the animal be costive, a clyster should be thrown up, consisting of about three or four quarts of warm water, and half a pound of common salt. A pint of castor oil, also, may be added to the above drink: if this cannot be procured, sweet oil, linseed oil, or even melted lard, may be substituted.

Dr. Clater and others recommend to take only a small quantity of blood daily, or every other day; but nothing can be more absurd and dangerous. All strong stimulating or heating medicines, in this disorder, are also highly improper. 'There is an affection of the lungs and parts connected with them,' observes an experienced writer, 'which will not admit of copious bleeding. There is not that difficulty and quickness in breathing; the pulse is weak, but not much quicker than usual: the kernals, or glands, about the throat, are often swollen; sometimes there is a considerable difficulty in swallowing, which is particularly seen when the animal attempts to drink; in short, this is nothing more than a severe degree of catarrh or cold: but, even in this complaint, moderate bleeding is necessary, and powerful stimulants are extremely pernicious. When the disease, however, has not been discovered for some days, and the animal appears much weakened by it, bleeding is of course improper.'

2. INFLAMMATION OF THE STOMACH.

Symptoms.—All ruminating animals have more than one stomach; in the cow there are four; the first is considerably larger than the rest, lies on the left side, and is commonly called the *paunch.* The food having been sufficiently macerated in this stomach, is forced up gradually into the mouth, where it undergoes a complete mastication, which is termed chewing the cud. The food is then again swallowed, and conveyed to the second stomach, for the gullet opens indifferently into both. It ends exactly where the two stomachs meet; and there is a smooth gutter, with rising edges, which leads into the second stomach, and thence to the third and fourth: the animal, however, has the power to direct it into which it will. The second stomach is named the *bonnet*, or *king's hood.* Its internal surface consists of cells, resembling a honeycomb; here the food undergoes a farther maceration, and is then conveyed to the third stomach, called *manyplies*; because the internal surface rises up into many folds. Some of these folds are longer than others, and on their surface small glands may be seen, something like millet seed. From this it passes into the fourth, or red stomach, commonly called the *caul.* This much resembles the human stomach, or that of the dog; only the inner folds are longer and looser. Here the food is perfectly digested, and prepared for the nourishment of the animal.

Such a complicated structure renders this organ particularly liable to disease; inflammation, however, does not appear to occur frequently as a primary disorder, but is more commonly a consequence of some offensive matter lodged in one of the four stomachs, or from the animals feeding so greedily as to weaken the organ, and prevent it from performing its functions.

It is usual to consider this disorder in cattle under two distinct species; one affecting the first stomach or paunch, and the other the third stomach or manyplies. This matter is commonly denominated *lake-burn.*

Causes.—Inflammation of the stomach is commonly produced by some acrid offensive substance which the animal has swallowed, or by giving (agreeably to the directions of some ignorant cow-leech, or foolish cow-doctoring book) too strong a dose of astringent medicines to cure the *red-water*.

Cure.—Should inflammation attack the stomach without any hurtful matter being swallowed, or any improper accumulation of food, the principal remedy will be plentiful bleeding, abstinence from food, and mucilaginous drinks, such as linseed tea, and the administration of relaxing clysters. If it proceeds from swallowing poison, the cure will be found under a different head.

33. Inflammation of the Bowels.

Symptoms.—The principal symptom of the disease is a griping pain, which causes the animal to lie down and become very restless; he frequently turns his head towards his belly, or endeavours to strike it with his hind-foot. The pulse becomes quick, the breathing disturbed, and, when the pain is violent, a copious perspiration takes place. When proper remedies are not employed, the disease terminates in mortification and death.

Causes.—This disorder may proceed from costiveness, drinking cold water when much heated, or by being over-driven.

Cure.—In the treatment of this complaint, the circumstance of the case must be carefully attended to. 'If the pulse is much quicker than natural,' says Mr. White, 'the under surface of the eyelid unusually red, and the breathing disturbed, let a large quantity of blood be immediately taken away, even five or six quarts; and then, unless the bowels are already unusually open, give the following drink:

Sulphat of magnesia, -	8 ounces.
Castor oil, - - -	1 pint.
Gruel, - - - -	1 pint.

Dissolve the salts in the gruel, and add to them the oil for one dose.

'The operation of this drink should be assisted by clysters. When all the above symptoms, however, are not observable; if the under surface of the eyelid is not redder than usual, or if it is rather paler; if the pulse is nearly in its natural state; and particularly if the animal is rather loose, or scours, the bleeding should be moderate: and if he be rather weak and low in condition, it had better be omitted. The following anodyne drink is to be given:

Tincture of opium, -	half an ounce.
Spirit of nitrous ether.	2 ounces.
Water, - - -	1 pint.

Mix for one dose.

'When the animal has been kept for some time upon dry food, and he has been observed to dung sparingly, and what he does void appears to be discharged with some difficulty, is more solid than usual, of a different colour, or of an offensive smell, it shews that the disease is occasioned by costiveness; in which case relief can only be obtained by the laxative drink and clysters. Bleeding, however, must not be omitted, particularly if the pulse is quickened, the under surface of the eyelid redder than natural, and the breathing disturbed. If the laxative prove ineffectual, in removing the costiveness, it should be repeated.'

4. INFLAMMATION OF THE LIVER.

Symptoms.—Cattle are more subject to diseases of the liver than horses, because the latter have no gall bladder; but in the former is one of a considerable size. The symptoms of a diseased liver are very complicated; and hence we have a variety of nominal complaints. We shall treat of these subjects, as far as we are acquainted with them, under the heads *Jaundice*, *Diarrhœa*, and *Hepatic Consumption.*—With respect to the acute inflammation of the liver, when it does occur, it is to be treated in the same manner as inflammation of the lungs, and is probably produced by the same causes. However, this disease is most commonly of a chronic or slow kind, causing a defective action in the organ, in consequence of which an unhealthy kind of bile is formed, which plugs up the ducts of the liver, and causes a derangement in the organs connected with it.

Causes.—This disease is said to be most common in hot and warm climates, and that such animals as are fat are most exposed to its attacks. It may also be brought on by blows or bruises on the short-ribs, by which the liver may have received some injury.

Cure.—Before attempting the cure of this disease, it must be ascertained whether it be acute or chronic. The mode of treatment will be found under the heads alluded to above.

5. INFLAMMATION OF THE KIDNEYS.

Symptoms.—This disease is indicated by a quick pulse; loss of appetite; the animal is frequently endeavouring to stale, and voids only a very small quantity, with much difficulty and pain; pressure on the loins gives pain, and causes the animal to shrink or give way to it: there is generally considerable stiffness in the hind parts observable when the cow attempts to walk; the urine is commonly of a dark red colour. This disease is different from that named red water; and, unless properly treated at its commencement, often terminates fatally.

Causes.—The kidnies may become inflamed either from external injury, or from irritating substances that pass through them in the course of the circulation; but according to Mr. Blaine and Mr. Feron, this disorder is most frequently produced by the indiscriminate use of strong diuretic medicines.

Cure.—The first and most necessary measure to be taken in this disorder is bleeding, after which administer a pint of castor oil. If there be any signs of costiveness, let clysters of warm water with a little sweet oil be given. A liniment composed of four ounces of the flour of mustard, and half the quantity of the oil of turpentine and the water of ammonia, should be rubbed on the loins; after which, let them be well clothed, or covered with a fresh sheep or lamb's skin. If this does not remove the constant straining to stale, let the following clyster be employed:

Tincture of opium, - -	1½ ounce.
Thin gruel, - - -	1 quart.

Or else,

Crude opium, - -	1½ drachm.

Dissolved in warm water, and mixed with gruel. If the animal is very thirsty, an infusion of linseed. or a decoction of marshmallows, is the properest drink.

Dr. Clater makes the following remark upon this disease:—Country farriers treat this disease very improperly, by giving hot stimulating drenches, without first properly qualifying them with others.' The doctor then gives us the following prescription.

Castile soap, - -	1 ounce.
Salt of tartar, - -	half an ounce.
Balsam copaiva, - -	1 ounce.
Oil of juniper, - -	half an ounce.
Camphor, - - -	2 drachms.
Tincture of opium, -	half an ounce.
Treacle, - - -	4 ounces.

For one dose. To be repeated every day, or every other day, as the symptoms may require.

'If Dr. Clater,' observes Mr. White, 'wished to produce inflammation of the kidnies, I would have given him credit for great ingenuity; for surely a more likely method could not, with any appearance of seriousness, have been proposed. Fortunately, however, both for the animals and their owners, it is a disease that does not so often occur as this gentleman would lead us to suppose; and the complaints that have generally been described as such, are a spasmodic affection of the bladder—a disease by no means difficult of cure—and a diseased state of the kidnies, in which blood appears to be mixed with the urine.'

6. Inflammation of the Bladder.

Cows, during the latter part of the time they are in calf, have sometimes a frequent desire to void their urine, from an irritable state of the bladder. When this is observed, it will generally be found to depend upon costiveness; in which case, a laxative drink and clyster are the most proper remedies. This state of the bladder has been often termed inflammation, but very improperly; 'and I am inclined to believe,' says an experienced practitioner, 'that the disease very rarely occurs.' If the neck of the bladder appears to be obstructed, or if there be reason to suppose that there is a *retention* of urine, the female catheter, or even the finger, may be easily introduced, so as to allow the water to pass off freely.

7. Inflammation of the Womb.

Symptoms.—This disease is indicated by a quick pulse, loss of appetite, a languid appearance, and gradual loss of her milk. As the disease advances, the bladder becomes affected, and there is often a fetid discharge from the parts. Sometimes the animal is almost constantly straining, as if endeavouring to void something; in such cases, there is a small quantity of urine frequently discharged; at others, the urine is so long retained, as to render it necessary to relieve the bladder by drawing it off. This may easily be done, by introducing an instrument through the urethra into the bladder. At this stage of the disease, the cow becomes very weak, moves with difficulty, and is sometimes incapable of standing.

Causes.—This is a very common disease, and generally proceed either from the cow having been kept in too high a condition at the time of calving, or from too much violence having been used in extracting the calf.

Cure.—The necessity of drawing off the urine, when too long retained, has been mentioned above. This may be done by the finger, the passage being very short. But the principal remedies at first are bleeding and the following laxative drink:

Castor oil, - - -	8 ounces.
Epsom salts, - - -	6 ounces.

Dissolved in a quart of thin gruel or warm water.

Clysters of warm water and oil are useful also. After the bowels have been opened, give the following anodyne:

Camphor, - - -	2 drachms.
Tincture of opium, -	half an ounce.
Spirit of nitrous ether,	1 ounce.

To be given in a pint of gruel.

This may be repeated, after ten or twelve hours, should it be found necessary. When the pain and straining are considerable, the anodyne clyster may also be given, which consists of one ounce and a half or two ounces of tincture of opium, and about a quart of thin fine gruel.

Having observed that this disease is often produced by keeping the cow too well, or allowing her to get rather fat previous to calving, the mode of prevention need not be pointed out: and it should be kept in mind, that when the womb, or any other internal organ, is inflamed to a considerable degree, a cure is absolutely impossible. The earliest attention, therefore, should be given to these complaints,

8. INFLAMMATION OF THE BRAIN.

Symptoms.—This serious and fatal disorder is fortunately of rare occurrence. An animal, when labouring under this disorder, is described as looking frightfully, being unusually watchful, starting often, groaning vehemently, as if affected with sudden and violent pain; his respiration slow, but he sometimes makes very long inspirations, and appears for a time as if his breathing was entirely suspended. Suddenly the beast will rise, turn about, and instantly lie down again, showing marks of great restlessness and delirium. When the frenzy is high, the eyes look red and furious; at other times they border on langour and stupefaction; but the beast always appears to labour under considerable fear, and dreads the approach of every thing; he is often quite ungovernable, and scarcely ever inclines to rest except in the latter stage of the disease, when, if it has been neglected, or has not yielded to the usual remedies, a lethargy takes place, and the animal sinks. Sometimes the urine is hot and high-coloured; but it is said that before a fit of frenzy takes place, the urine is often of a pale colour, and thinner than natural.

When the symptoms of fury or irritation suddenly cease, and a lethargy takes place, while the pulse becomes feeble, and the strength diminishes, the case is pretty certainly hopeless; but if the fever, redness, and flushing of the eyes gradually subside, without the pulse sinking, or great debility coming on, the beast may generally be pronounced recovering.

On opening the head of such animals as have died of this complaint, very evident marks of inflammation appear about the membranes of the brain, and very frequently in the substance of the brain itself. All the vessels are turgid with blood; and on cutting into the brain, innumerable little red points are to be seen, which do not appear in the natural state. Very commonly an effusion of blood, or of purulent matter, is found to have taken place in the cavities of the brain, or in some part near its surface.

Causes.—The causes of inflammation of the brain are generally the same that produce inflammatory fever, applied in a greater degree; as great heat, excessive exercise, a sudden change from a poor to a rich diet.

Cure.—The cure of this complaint requires the most prompt and decisive measures. Blood must be taken in large quantities from the jugular vein or temporal artery. Not less than three quarts should be taken from an ordinary ox or cow; and if the animal is very large, four may be taken; and the bleeding must be repeated a few hours after, if the symptoms do not abate. When the beast is very furious, it is often dangerous to bleed in a very deliberate way; but as his recovery will almost certainly depend on a sufficient loss of blood in the early part of the disease, it will not be amiss to bleed him in the manner described by Mr. Blaine, who plunged a lancet into each jugular, and permitted the animal to bleed till he fainted, by which means, though the disease was far advanced, he saved the animal. After bleeding, a stimulant blister should be applied to the top of the head, and the sides of the neck should be well rubbed with a mixture of powdered cantharides and oil of turpentine, and other means used to promote external inflammation, for the purpose of determining the blood from the head. In addition to these means costiveness should be carefully guarded against.

Mr. Downing advises a method of treating inflammation of the brain in cattle, that is extremely contradictory and inconsistent. He at first very proper advises bleeding; but he directs this to be followed by giving diapente, a very powerful cordial medicine, the administration of which completely counteracts the effects of the bleeding. *Dr.* Downing describes a fever of the brain as distinct from inflammation; and he then treats of a sleepy fever. These are evidently symptomatic affections, and should have been given as such, as well as giddiness, or swimming in the head, which is described by *Dr.* Downing as 'a distemper belonging to the cavities of the eyes and optic nerves. It gives a wavering motion to the body. For if the optic nerve, or its expansion on the bottom of the eye called *retina*, be agitated by any preternatural heat or other emotion, objects will change their situation; therefore, this disease is a fever affecting the cavities of the eyes, or the optic nerves.'

9. INFLAMMATORY FEVER.

Symptoms.—When an animal is seized with this complaint, he becomes suddenly listless and stupid, hangs down his head, refuses his food, and appears to move with difficulty. Swellings soon appear on different parts of the body, which, when pressed by the finger, make a crackling noise. Sometimes, the joints are particularly affected: at others, the swelling appears on the back, shoulder, or belly. The disease attacks rather suddenly, and often proves fatal, particularly when proper remedies are not speedily employed.

Causes.—This disease is known by various absurd and ridiculous names, such as *Quarter-ill, Quarter-evil, Shrinking in Black Quarter, Joint Felon, &c.* It frequently happens to young cattle, generally between the first and third year, most commonly about the second year of their age. It appears to be occasioned by feeding them too hastily; by putting them, when in a lean state, into rich succulent pasture.

Cure.—Bleeding is the first remedy, and must be proportioned to the age and strength of the animal; perhaps from three to four quarts will generally be found sufficient. The blood should always be measured. After this, give the following purgative drink:

Barbadoes aloes,	3 drachms.
Carbonat of potash,	2 drachms.
Sulphat of soda,	6 ounces.
Warm water,	1 pint.

Mix, for one dose.

This dose will generally be found sufficient for an animal of two years old. Should the disease occur in situations where these medicines cannot be procured, give from four to six ounces of common salt in a pint of water: the addition of four ounces of castor oil, sweet oil, or even linseed oil, will render it more efficacious. It may be proper to remind the reader, that, as this disease frequently proves fatal, in whatever manner it is treated, preventive measures should never be lost sight of. Should the animal, however, be relieved by the treatment we have directed, considerable weakness may follow; for which give the following, twice a day:

Powdered carraway seeds,	1 ounce.
Ginger,	2 drachms.

To be given in a pint of oatmeal gruel, or ale.

If the joints be affected and swollen, rub them with the following liniment:

Linseed oil,	4 ounces.
Oil of turpentine,	2 ounces.
Liquid ammonia, or spirit of sal-ammoniac,	1 ounce.

Mix.

Setons in the dewlap, or other parts of the body, are sometimes applied as preventatives of this disorder. If it be produced by feeding cattle too hastily, and this seems to be the opinion of all those who have written on the subject, the mode of preventing it is sufficiently obvious. Mr. Lawrence has very properly advised, that a piece of short or inferior keep should be reserved, as a digesting place, where cattle may occasionally be turned to empty and exercise themselves. This is certainly better than bleeding, or any medical preventive.

'I think it necessary,' says Mr. White, 'to mention another mode of prevention, which, I have been informed by an intelligent gentleman, who has had great experience in breeding and rearing cattle, has been adopted by him and his neighbours with great success.

'He informs me, also, that before this method was discovered, they lost so many young cattle by the disease, that they had determined to breed no more. They happened, however, to hear of this preventive, and purchased it, as a valuable secret.

'Having properly secured the animal, an incision is to be made in the skin, beginning from the division of the claws, and carrying it upward, to the extent of two inches. A blueish vessel will be seen, which is to be drawn up with a hook, and removed with scissors; the part is afterward to be dressed as a common wound. Mr. Lawrence is very humourous upon this apparently whimsical operation; and I should certainly consider it in the same light that he does, but for the very respectable authority from which I received it.'

10. PUTRID FEVER, OR MURRAIN.

The most serious epidemic fevers that have ever appeared among domestic animals, are those which, from their violence and fatality, have been called *murrains*, or *pests*, and which have raged occasionally from the earliest historical accounts. From the several histories that have been given of the disorder, it appears to have differed in its symptoms and effects, according to the countries in which it appeared, the various seasons in which it commenced its ravages, and some other circumstance not fully ascertained. There seems to have been no doubt that the disease was infectious, or at least that it was easily propagated among the species of animals which it attacked: but it does not appear to have been capable of spreading to other species; as men, horses, sheep, and dogs, that lived in the neighbourhood of the infected cattle, shewed no marks of having received the contagion. Nineteen out of twenty cattle attacked by this disease are said, by M. Sauvages to have died.

Symptoms.—The following is Dr. Brocklesby's account of this disease. For ten days or a fortnight the cattle were troubled with a dry cough, which is indeed not an uncommon symptom among cattle at the close of a severe winter, and therefore Dr. Brocklesby did not consider it belonging to the present disease: the hair was rougher on their skin than ordinary; their eyes looked heavy, and, when the principal disorder appeared, they refused fodder, but had an insatiable thirst for a time. The milch-cows decreased in their milk, which remained to a certain quantity, sometimes for two days, before it changed colour, but at length often dried up. Upon ceasing to chew the cud, a shivering seized them all over, and a high fever immediately came on; the milk, if any remained to that time, curdled over the fire, but did not in the first of the disorder. At first the belly was costive, but for the most part a looseness succeeded within forty-eight hours after the shivering fit. The stools were first green and watery and of a stinking smell; their consistence, however, altered afterwards to a viscid, slimy matter, the purging accompanied till about the seventh day and about that time the excrements became thicker, in such as recovered; and these soon chewed their cud again, and tasted of fodder, which they had before absolutely refused through the whole disease. All that had not the looseness before the third day died. The urine was very high-coloured, and in smaller quantities. The degree of fever was observed very high; upon the third day the pulse beat near a hundred times in a minute, whereas the ingenious Dr. Hales found a sound ox's artery not to exceed thirty-eight pulses in the same time. At different intervals, after the attack, they all laboured under a prodigious difficulty and panting for breath; some suffered these after the first day, others not before the third. But this disorder suffered remissions, and seemed to be augmented towards evening and at night. Several beasts discharged, towards the fourth or fifth day, when ill, a very great quantity of a frothy liquor from the mouth and eyes; others ran actually purulent matter from the nostrils. As the disorder advanced, the eyes sunk more in their orbits, and some were observed to be quite blind. Towards the conclusion, the fore parts of the body, and particularly the glands about the head, were prodigiously swelled, and several beasts had a universal emphysema, or crackling of air beneath their skin; those that were not blooded, equally with such as were. Frequently one might observe pustules break out, on the fifth or sixth days, all over the neck and fore parts. Some cattle were raging mad on the first day; such were necessarily killed; some dropped down suddenly; others died on the third, most on the sixth or seventh, very few alive to the fourteenth day: before death the horns and dugs grew remarkably cold.

Causes.—The causes and nature of this disease have not been exactly ascertained. Some have supposed it connected with a peculiar state of the atmosphere, and that it did not originate in contagion. Many considered the principal causes of the disease to be previous hard winters, obstructed perspiration, worms in the liver, and corrupted food.

Cure.—The method of treating the cattle recommended by Dr. Brocklesby is as follows: Before the cattle are seized, he advises two setons, or pegs, to be put deep into the dew-lap, and into the under part of the neck; and immediately upon refusing fodder, the beasts should have three quarts of blood taken away; and after twelve hours, two quarts more: after the next twelve hours, about three pints may be let out; and after the following twelve hours, diminish a pint of blood from the quantity taken away at the preceding blood-letting: lastly, about a single pint should be taken away in less than twelve hours after the former bleeding: so that when the beast has been blooded five times, in the manner here proposed, the worst symptoms will, it is hoped, abate; but if the difficulty and panting for breath continue very great, he sees no reason against repeated bleeding, or at least against taking away the fifth time, instead of a single pound, twice that quantity.

In the mean time, the setons or pegs should be daily promoted to suppuration by moving the cord; and the cattle should have as much bran-water as they chuse to drink luke-warm. This should be made a little tart or sourish, either with common vinegar or spirit of vitriol; and immediately after the first bleeding, they should have the following drench:

Camphor, - - -	1½ drachm.
Honey, - - - -	2 ounces.
Nitre, - - - -	1½ ounce.
Water-gruel, - - -	1 quart.

It is extraordinary that this treatment, with a little variation in the internal medicine, is recommended by Mr. Feron as the result of his own experience, in what he calls the general inflammation of cattle.

11. CATARRH, OR COLD.

Symptoms.—There are generally reckoned two species of catarrh; simple cold, and epidemic catarrh, or *influenza.* The latter sometimes attacks a whole yard of oxen or cows in one night. On the first attack, the animal appears dull and languid; the eyes are watery and sometime partially closed; the appetite is diminished; and, most commonly, it is attended with cough. Swellings under or below the ears, difficulty in swallowing, and a discharge from the nostrils, are not unusual symptoms of the complaint. When catarrh prevails to this degree, it is generally named *influenza*, or *distemper*, and has been thought contagious; but this opinion has not been proved to be true.

Colds are very common, particularly in wet or cold weather; and, though they are often thought of too little importance to require particular attention, yet by neglecting them, and suffering the animal to continue exposed to the weather, the most serious consequences may ensue. From such neglect, we often find that the animal gradually declines in flesh and strength, becomes hidebound, and has a rough, staring coat; at length tubercles form in the lungs, the mesenteric glands become enlarged, obstructing the passage by which nutriment is conveyed to the blood: this is succeeded by atrophy, consumption, and death.

Causes.—The causes of colds are generally understood, and should not be despised.

Cure.—It is highly important to attend to this disorder as soon as it is discovered; and it may be safely asserted, that more good may be done by nursing, placing the animal in a warm situation, giving him warm nourishing fluids, such as gruel, infusion of malt, &c., than by all the medical hodgepodges that have been recommended by cattle doctors, from the time of the great Gervase Markham to that of the celebrated Dr. Clater. Colds are, at some seasons, so prevalent, as to be considered epidemic and infectious. On such occasions, they generally occur with great violence, and are accompanied by fever, and soon after the attack, by considerable debility. With respect to the treatment of this disease, the hot, stimulating drenches, commonly recommended, are injurious. Skerret recommends the following curious farrago, for one dose, which is to be given, in a quart of gruel and a pint of ale, once or twice a day, till the disease is removed.

Nitre,	half an ounce.
Salt of tartar,	1 ounce.
Camphor,	2 drachms.
Valerian,	1 ounce.
Liquorice powder,	1 ounce.
Anise,	1 ounce.
Turmeric,	1 ounce.
Juniper berries,	1 ounce.
Mustard,	2 ounces.

From this specimen one might reasonably conclude, that Mr. Skerret is a druggist as well as a cow-doctor.

Clater recommends, with other seeds, &c., 'long pepper, turmeric, and ginger, of each one ounce, with a quart of ale and two ounces of butter.'

Bleeding, at the commencement of colds, is generally proper; the only circumstance which indicates its impropriety is considerable weakness and low condition. The quantity of blood taken should seldom exceed two quarts. If the animal is costive, give a laxative drink; but if more open than usual, that is, if he purges or scours, give the following powder in some oatmeal gruel:

Powdered ginger,	3 drachms.
Antimonial powder,	2 drachms.
Camphor,	1½ drachm.
Tincture of opium,	half an ounce.

To be repeated after eight or ten hours, should it be found necessary. If there be any difficulty in swallowing, and particularly if it is considerable, the following liniment should be rubbed about the throat:

Oil of turpentine,	1 ounce.
Any common oil,	1 ounce.
Liquid ammonia, commonly called spirit of sal-ammoniac,	half an ounce.

Mixed.

In common colds, if the animal were placed in a comfortable situation, and well attended to, medicine would be unnecessary. Even bleeding, in common slight colds, is seldom required; but should the animal by a change of situation, become hot and feverish, should the eyes look red and the flanks move quickly, he should be bled freely; and if in any degree costive, the laxative should be given. This, however, does not often happen, except the costiveness, which may be expected from a change of diet; the laxative, therefore, is often proper; but when there are no feverish symptoms present, it should be mixed with some cordial medicine, such as one ounce of carraway seeds, and three or four drachms of ginger.

When the influenza, or distemper, has not been attended to, or has been improperly treated, at an early period, the animal becomes extremely weak, and every means must be employed to recruit his strength. On such occasions, a tonic may be given twice or three times a day, which, in conjunction with a warm, nourishing diet, and careful attendance, may ultimately effect a recovery.

It is proper, however, to observe, that, if the animal should become costive, a mild laxative will be proper; about half a dose will be sufficient. If grass can be conveniently procured, when the animal is kept under cover, a moderate quantity will be useful. In favourable weather, the field is the best place; but a sheltered and warm situation should be chosen.

The following laxative may be used:

Sulphat of soda (Glauber's salt)	1 pound.
Oatmeal gruel, - - - -	1 quart.
Powdered carraway seeds, -	1 ounce.

Mix for one dose.

Whenever this disease appears to be epidemic, preventive measures should be seasonably adopted, which is more particularly necessary when rain and cold winds prevail; for catarrh, or cold, is often an insidious complaint, and, if neglected, may produce very serious consequences.

12. SCOURING ROT.

Symptoms.—In cattle this complaint is sometimes very serious, and farmers not unfrequently lose several of these animals by it in a season. This has induced them to call it the *scouring rot.* When the purging has continued long, it produces in these animals a general weakness and loss of flesh. Their skin sometimes hangs loose about the body; in other cases they appear hidebound; the hair turns sandy, or of a greyish colour; their eyes grow pale; the pulse becomes weak and irregular; their excrements thin and slimy, and frequently change colour, especially in the early stages of the disease; but when the complaint is pretty far advanced, the dung appears like half-chewed food; and, in fact, in these cases the food appears to pass through the bowels without undergoing the digestive process. It is said that when the animals have been long affected by this scouring rot, they feel a great degree of distress and pain when grasped on each side of the back-bone, just behind the shoulders; and this is considered as a sure mark that the beast has become tainted or unsound, from the scouring rot.

Mr. White says, 'This disease consists in a frequent discharge of dung, of an unusual colour, thin, and slimy. The animal gradually loses flesh, but continues for some time to feed well and ruminate. At length the excrements become of a darker colour and frothy, and in the latter stages have the appearance of half-chewed food, the digestive power being entirely lost.

Causes.—The causes of this complaint appear to be, generally, exposure to cold and rain, particularly when the animal has been overdriven, or heated by working immediately before. Drinking plentifully of water, under similar circumstances, will also produce the disease. Want of nourishment, particularly in cows that are constantly milked, often causes the scouring rot.

Cure.—In the treatment of this complaint in cattle, a number of strange remedies have been employed, such as hog's dung, turpentine, and buttermilk; dock root boiled in salt and water, and nettle root boiled in forge water. In Rowlin's Cow Doctor, the following receipt is recommended:

Bole armoniac, - - -	3 ounces.
Bay berries, - - -	2 ounces.
Alum, - - - -	2 ounces.
Shavings of ivory, - -	2 ounces.
Powdered comfrey root, -	2 ounces.

Boiled in two quarts of skimmed milk, adding while boiling a handful of starch. This is to be given for a dose, for which, however, it is perhaps rather too strong. Mr. Lawrence recommends, that on the first appearance of the scouring, the cattle should be taken to the home fold, and put on dry food, which will generally supersede the necessity of medicine. The remedy which Mr. Blaine seems chiefly to rely on, is the following decoction:

Ipecacuanha,	1 ounce.
Nux vomica,	1½ drachm.
Galls,	half an ounce.
Alum,	2 drachms.
White vitriol,	20 grains.

In a quart of water boiled to a pint. Perhaps this decoction is rather too complex, and some of its ingredients may be spared. The following receipt is well suited to these cases:

Alum,	half an ounce.
Kino,	2 drachms.
Ginger,	1 drachm.
Castile soap, softened with water,	2 drachms.

Powder of oak bark, enough to make a ball.

It may be supposed that where the scouring has continued for any considerable time, the bowels are become extremely sore and tender. In this case, mucilaginous or oily substances would be of advantage, and they should be given frequently, both by the mouth and by way of clyster. Mr. Lawrence recommends a pound of fresh mutton suet boiled in three quarts of milk until the suet is dissolved, to form a drink to be given warm. This, we doubt not, will answer extremely well. If the disease should go to an alarming height, starch clysters with laudanum may be given as a last resource. Mr. Blaine remarks that, in these cases, he should be disposed to try animal food altogether; giving broth to drink, or the blood of other animals, with meat balls forced down the throat; as he thinks it not improbable that thus a change might be effected in the constitution, which might pave the way to a cure.

Dr. Dickson thinks that much advantage may be derived, in these cases, from a strong decoction of hartshorn shavings and cassia, with powdered chalk, in the proportion of half a pound of chalk, four ounces of shavings, and an ounce of cassia, to be boiled together in two quarts of water to three pints, adding the cassia towards the close of the boiling. A hornful of this mixture is to be given several times in the day, shaking it well every time.

Mr. White supposes that the immediate cause of the disorder is an unhealthy action of the liver. He recommends the following drink, which he admits will rather increase the scouring at first.

Quicksilver pill,	from 2 to 3 drachms.
India rhubarb,	3 drachms.
Castor oil, -	4 ounces.
Gruel, - -	1 pint.

Mix, for one dose.

This should be well stirred immediately before it is given, as the quicksilver pill is heavy, and would otherwise soon separate and fall down; for the same reason it is to be given in gruel, which will suspend it longer than a thinner fluid.

This dose should be repeated for three mornings following, unless it cause sickness or griping, or increase the scouring in a considerable degree. On the fourth morning, begin with the following astringent drink, or earlier, should the above medicine produce its effect before the three doses have been taken. During the time the cow is taking the former medicine, she should be supplied with warm fluids, of which thin gruel is the best, and must not be exposed to a cold air.

Starch, - - - -	4 ounces.

Mix in the usual way, that is, as it is employed for stiffening clothes, with three pints or two quarts of water, so as to make a thick, mucilaginous fluid. To this add,

Tincture of opium, -	2 drachms.
Ginger, - - -	3 drachms.
Catechu, or terra Japonica,	half an ounce.

Mixed.

When the scouring has ceased, the cow should be brought back to her usual state gradually. At first, she should be turned out for a few hours, in some dry pasture, when the weather is favourable; and her water should be gradually given less warm. This precaution is highly necessary, as the affected parts do not immediately recover their strength after the scouring has ceased.

In the diarrhœa, which arises from exhausting a cow by constant milking, when she is not sufficiently fed, or is supplied with food of a bad quality, the remedy is sufficiently obvious. But, in this case, it too often happens that the constitution is worn out before it is thought necessary to alter the poor animal's condition. Whenever this change is made, it must not be done too hastily, as other diseases might thereby be produced.

Calves, when first weaned, are subject to a species of purging which sometimes proves extremely obstinate; and it is said that the principal reason of the calf-feeders giving them chalk to lick is to prevent this purging. It appears that this disease will take place in calves, when they are fed on the milk of some particular cows; and that when the milk is changed the complaint goes off. The purging may in general be checked by boiling starch and bean flour in their milk; and if it still continues obstinate, a little ginger and laudanum may be added.

The writer last quoted says, 'As to the medical treatment of this complaint, much useless expence is often incurred. The most profitable plan is, I believe, to put the animal under cover, especially in winter, autumn, or the early part of spring; and feed on hay, bran mashes, with oats, or oil cake; and endeavour to make her fit for the butcher. If it be a milch cow, she should be suffered to go dry. Should the scouring continue, notwithstanding this change, give, in the first place, the drench before directed, or the following:

Common salt, - -	8 ounces.
Flour of mustard, -	2 ounces.
Water, - - -	1½ pint.
Oil, or melted lard, -	half a pound.

'This will increase the discharge for a short time: afterwards, the dung will gradually become of a more natural consistence. But, should the scouring continue, give the astringent drink already prescribed, or the following:

Powdered catechu, -	6 drachms.
Tincture of opium, -	half an ounce.
Powdered ginger, -	2 or 3 drachms.
Warm ale, - -	1½ pint.

Mix.

'The powder, or tincture, of galls, would also be found a powerful astringent. Some farmers give mutton suet boiled in milk, with four ounces of oil of turpentine. I once gave eight ounces of oil of turpentine mixed with a quart of gruel, and afterwards kept the animal, under cover, upon hay and bran mashes. The dung acquired a healthy appearance in a short time; but, on turning her out again, the disease quickly returned.'

13. Red Water.

Symptoms.—This disorder is sometimes called *bloody urine, pissing of blood*, or *red water*. It often happens to cattle, and when neglected, or improperly treated, frequently proves fatal. The most conspicuous symptom is, the red colour of the urine, which appears as if it were mixed with blood: when the disease is not checked, the urine becomes of a darker colour, and the other symptoms, which will be described presently, gradually increase; at length the urine resembles foul coffee, the animal loses strength rapidly, and sinks under the disorder. They seldom live beyond the tenth or twelfth day, when the disease is not checked or put a stop to by proper remedies.

Red water is generally attended with costiveness; and, if this is not the case at first, it almost invariably happens in the progress of the disorder, unless prevented by laxative medicine, and a suitable diet; hence it is, that animals affected with this disease, when taken up and fed on hay, and particularly when strong astringents are given, without attention being paid to the state of the bowels, they generally become obstinately costive, and die. Even when kept out and feeding on grass, this constipation of the bowels is very apt to occur. In some instances, the dung has become so hard, that it has been found necessary to draw it off with the hand.

On the first attack of this complaint, besides the red colour of the urine, the animal generally appears rather sunk in the eyes, listless, and without appetite; the nose, instead of being cool and covered with moisture, as in the healthy state, becomes hot and dry, and the coat appears dry and unhealthy. The urine is seldom voided with difficulty or much more frequently than usual, the disease having no resemblance, in this respect, to inflammation of the kidnies.

The disorder most commonly prevails in the spring season, when the weather is most variable, and the grass begins to grow. It has been often observed to happen when cattle are changed from a low meadow ground to a high or exposed situation;

and it has sometimes occurred after a change of pasture, when there has been no remarkable difference, either in the soil or situation. Bulls, oxen, and cows, are said to be equally liable to the disorder; and it does not appear that an animal, when perfectly recovered from the complaint, is more liable to it than others. Bulls and oxen sometimes void red water from over-exertion, or bruises on the loins. This is named, by some farmers, *strained water*, and is not considered of importance, as it is seldom accompanied with any degree of fever, and generally ceases in a short time

Causes.—Red water is supposed to be produced sometimes by sudden changes of the weather, by want of water, or the use of such as is unwholesome. Young cattle are more subject to it than those of more advanced age; hence particular attention should be paid to these young animals: as when the affection has once taken place, it is considered as highly dangerous.

Cure.—Medicines of a laxative quality are the best remedies in this disorder. The following is recommended as a safe and efficacious purge:

Epsom salt,	4 ounces.
Nitre,	1 ounce.
Whey, or thin gruel,	1 quart.
Castor oil,	6 ounces.

Mixed.

Should this not remove the disease, give the following drink:

Alum dissolved,	1 ounce.
Terra Japonica,	1 ounce.
Oil of turpentine,	2 ounces.

Others prescribe as a laxative—

Epsom salt,	4 ounces.
Castor oil,	4 ounces.
Cream of tartar,	1 ounce.

Mixed in whey; and after this gentle purge, give the following:

Tincture of cantharides, -	2 ounces.
Roch alum, - - -	2 ounces.

To be given in a quart of lime water.

Mr. White mentions an experienced farmer, who gave his cows in this disorder, half a pint of the juice of the white blossomed nettle, which speedily cured the disease.

Bleeding is generally condemned in this disorder. When it proceeds from strains or bruises, a laxative may also be given; and, if the injury is considerable, the loins should be fomented with hot vinegar, and afterwards covered with a fresh sheep's skin.

Whenever the animal is observed to be frequently endeavouring to stale, voiding only a small quantity with much pain and difficulty, turpentine, and all other diuretics, are improper: mucilaginous drinks, such as infusion of linseed and decoction of marshmallows are most likely to afford relief.

14. Black Water.

Sometimes the colour of the urine in cattle is nearly black, and they are then said to labour under the black water. This affection is not well understood, but it is probably a variety of the last. It is said to be produced by feeding on cold wet land, and that simple removal of the cattle to a more favourable situation will often effect a cure. Mr. Lawrence considers the black water as a symptom of incipient mortification of the kidnies, and commends bleeding (unless in a cow), cordials and tonics, such as iron filings, with bark, opium, nitre, in strong beer, if the progress of mortification be apprehended. We may remark, that if mortification of the kidnies has taken place, which may in general be known by the stinking smell of the urine, all these remedies could produce no effect; and it would be much better to kill the animal at once, than be at the expence of time, labour, and medicines, in attempting to effect a hopeless cure.

15. DYSENTERY.

Symptoms.—This disorder is sometimes called the *bloody ray*. It is accompanied by an inflammatory fever and griping pains. The discharge of dung is frequent, and has an offensive smell, and is often mixed with the mucus, or natural lining, of the bowels. It very much resembles the disease called *molten grease* in horses.

Causes.—This disease generally attacks cattle in good condition that have been overdriven.

Cure.—The animal should be bled freely, and take afterward a pint of castor oil. If the animal does not appear relieved in some degree, in six hours, the pulse continuing quick, and the under surface of the eyelid unusually red, the bleeding is to be repeated. When the symptoms have been subdued, great weakness will remain; and every thing must be done to support the animal's strength. For this purpose, good oatmeal gruel, malt mashes, or gruel made with wheat flour, may be given freely.

If the discharge be very considerable, bleeding would be improper: but still the castor oil is generally necessary; and when it cannot be readily procured, sweet oil or melted lard may be substituted. Arrow root gruel is an excellent drink in this disorder. Should the disease continue after the above method has been tried, give half an ounce, or six drachms, of tincture of opium, in arrow root gruel.

Calves, at the time of weaning, if improperly managed, are liable to a severe diarrhœa, which, if neglected, often proves dangerous. The best remedy for this complaint is flour-milk gruel, with a little prepared chalk; in obstinate cases, about one drachm of ginger, and from half a drachm to one drachm of tincture of opium, may be added.

16. SCAB, OR MANGE.

Symptoms.—This disease is commonly called by herdsmen the *scab*, or *scurf;* and is thus described in a popular treatise on cow doctoring.

Skin stiff, and sits fast to every part of the carcase, as if too small for the body. It makes its first appearance about the head and jaws of the animal, with a scurfy, pale, and dry texture; and the beast begins to scratch against every thing that comes in its way: it then shews itself along the back, and behind the shoulders; and if timely aid be not procured, the animal will tear its skin till it bleeds violently, which ought to be prevented, if possible, as the scabs, which are the consequence of bleeding, much retard the efficacy of the ointment, and the loss of time confirms the disorder.

Causes.—This disease has sometimes been attributed to animalculæ, such as are found in the symptoms of the itch upon the human skin; and analogy seems to be in favour of this idea. It is, however, evidently connected with poor living and want of cleanliness.

Cure.—The following ointment is recommended as useful in this disease:

Sulphur vivum powdered, -	2 ounces.
Elecampane root do. - -	2 ounces.

Mixed with hog's lard.

Sometimes internal remedies, such as sulphur and gentle laxatives, are required; and the greatest attention must be paid to cleanliness, diet, and exercise. It may be necessary in some cases, especially where the animals that have caught the disease are very full of blood, to bleed and give cooling physic previous to the application of ointment; and in all cases the skin should be thoroughly washed with soap and water, both before and after anointing. The animals should always be confined till they are quite free from the disease.

In the Edinburgh Medical and Surgical Journal for July, 1820, the following remarks are made on poisoning cows, by the improper application of tobacco and corrosive sublimate in cases of the mange:

'For the mange in five cows of Mr. Hatchett, a man, vulgarly called a beast-leech or cow-doctor, applied a preparation containing tobacco and corrosive sublimate. In the course of one hour and a quarter, they all died, preceded by convulsions. The facts were proven on an action against this doctor, to the satisfaction of the jury, who awarded the damages. An experiment has been subsequently made by an intelligent medical practitioner on the diseases of dogs, in which six grains of shag tobacco, infused in about one drachm of water, being applied to the skin of a dog, presently killed the animal. It is, however, well known that dogs are very commonly washed with tobacco water for the mange, without poisoning them; but I have known it occasion long continued nausea, vomiting, purging, and discharge of urine. Probably, however, it requires a concentrated solution of tobacco to prove destructive to life. The same observation is made on the effects of corrosive sublimate and tobacco in the case of Mr. Hatchett's cows. Probably, too, these applications may have occasionally produced death, but the cases were unnoticed. It is also questionable, whether the tobacco or corrosive poisoned the cows or the two conjointly. Tobacco does not kill horses, for it is very commonly eaten with corn, to increase the appetite, nor do very large doses of corrosive sublimate taken internally poison them.'

17. LICE.

Calves are sometimes lousy, if they have been hard kept during winter, by being turned out in severe weather, fed on poor diet, and not kept clean. The best means of destroying these vermin, is by rubbing their hide with an ointment composed of staves-acre, or cayenne pepper, mixed up with hog's lard.

18. THE GAD-FLY.

The insect called *gad-fly* is very troublesome to cattle. Mr. Bracey Clarke has accurately described the different species of these insects, and their effects. The species called *Oe. bovis* chiefly attacks cattle, through the skins of which it pierces, to deposit its eggs. The pain which it inflicts in depositing its egg, appears to be much more severe than what is excited by any of the other species. When one of the cattle is attacked by this fly, it is easily known by the extreme terror and agitation that seizes the whole herd. The unfortunate object of attack runs bellowing from among his fellows, to some distant part of the pasture, or to the nearest water, holding his tail, from the severity of the pain, extended straight from the body, in a line with his back, with a tremulous motion, and stretching out his head and neck to the utmost. The rest of the herd, infected with the like fear, though not attacked, fly also to the water, or disperse to different parts of the pasture. 'Such is the dread and apprehension in the cattle for this fly,' says Mr. Clarke, 'that I have seen one of them meet the herd when almost driven home, and turn them back, regardless of the stones, sticks, and noise of their drivers; nor could they be stopped till they reached their accustomed retreat in the water.

When one of these flies happens to attack oxen that are yoked in the plough, there is often considerable danger, as the animals become quite ungovernable, and will often rush directly forwards with the plough, through hedges, or whatever opposes their career.

Heifers, steers, and the younger cattle, are in general most frequently attacked by this fly; the strongest and most healthy beasts seem constantly to be preferred by it, and this circumstance is said to be a criterion of goodness held in much esteem by the dealers in cattle. Tanners also have remarked, that their best and strongest hides have generally the greatest number of holes in them.

The larvæ of the *Oe. bovis* are commonly known to the country people by the names of *wormils*, or *wormuls*, or *warbles*.

The larvæ of the *Oe. equi* are generally called *bots*, and the puncture they make *puckeridge*, and which is not unfrequently attributed to the bite of the goat-sucker. For the destruction of the larvæ thus deposited, it has been recommended to press the parts, and rub them well with a little oil of turpentine, or some other stimulating application, or a little oil of turpentine may be injected into each hole.

A common and useful remedy for cattle bitten by these insects is as follows:

Hog's lard, - - -	4 ounces.
Tar, - - - -	2 ounces.

Melted together, and applied to the bitten parts.

19. THE FOULS.

This disorder in cattle is very similar to canker in the horse, producing a discharge of fetid matter from between the claws of the hoof, or sometimes from only one claw, when the cattle are said to be *foul in the foot*. Managers of cattle commonly divide this disease into two kinds, the soft, and the horney, which are said to require different modes of treatment. In the *soft fouls*, a running of very offensive matter takes place from the heels, or between the claws of the hoof; and the animal appears exceedingly lame. The treatment in this case consists in cutting away all the soft and spongy parts, and then applying a caustic liquid. The parts are then to be covered with a pledget spread with mild ointment, or, what is very common among farmers, a piece of fat bacon may be wrapt round the part, tied on the foot, and suffered to remain for two or three days. In the mean time, the animal should stand very clean, and be allowed to rest as much as possible.

The *horny fouls* seem to be very analogous to corns in horses. The animal is very lame, and, on examining the foot, the hoof feels very hot, and, when hard pressed, the beast evidently feels much pain. There will commonly be found some part of the horn penetrating into the softer parts of the foot, either at the heel, or between the hoofs. In the treatment it is necessary to cut away these parts of the horn, as well as any part under which there appears much inflammation. For this purpose, it will probably be necessary to cast the animal, but care should be taken that he be thrown on a soft place. After the hoof has been pared away, a rag moistened with vinegar and water should be tied on, and the animal must be sent to grass on a soft smooth pasture. If the inflammation and pain are very great, it may be necessary to bleed from the veins of the foot.

20. Cows previous to Calving.

'The diseases, observes Mr. White, which most commonly occur at this time, are strangury, or difficulty in voiding urine, and costiveness; and these it is highly necessary to attend to, as they may, if neglected, be the cause of the cow slipping her calf. The strangury is readily known to exist, by the cow making frequent attempts to stale, without being able to void any urine, or only a small quantity. When it is accompanied by costiveness, which is generally the case, and is often the cause of the complaint, the bowels must be opened by a laxative, composed of a pound of Epsom salts, dissolved in a quart of gruel; a clyster also should be given, consisting of two quarts of warm water and four ounces of linseed oil. The clyster may be repeated two or three times in the course of two hours, should it be found necessary. Should the strangury continue after the bowels have been emptied, give the following drink:

Camphor powdered, -	2 drachms.
Spirit of nitrous ether,	half an ounce.
Tincture of opium, -	half an ounce.
Gruel, in which one ounce of nitre has been dissolved,	1 pint.

Mix.

'Many cows have been lost, by allowing them to be too fat at the time of calving; they are then said to die of the milk fever, which, in fact, is nothing more than inflammation of the uterus, or womb. It is advisable, therefore, when a cow far gone with calf is in too good a condition, to reduce her, by changing the pasture, which is preferable to bleeding or physic; but if she has approached too near her time to admit of this change having any effect, then bleeding will be proper.'

21. Cows at Calving.

In general, nature is all-sufficient for bringing forth the young of domestic animals, and man has little to do, except to take care that the females be not in such a situation as may expose themselves or their young to injury. It is proper always to watch a cow that is near the time of bringing forth, and to be at hand to afford assistance when necessary.

Cows, particularly the short-horned species, often need the assistance of the accoucheur. The natural presentation of the calf is, with its head and fore-feet, the nose between the feet, and the back upwards. Downing enumerates seven preternatural positions: namely, 1st, Reverse presentation, or tail first. 2d, Fore-feet, no head appearing. 3d. Side-belly upwards, head reversed over one shoulder, legs appearing. 4th, Fore-feet, with head under the brisket. 5th, Head alone, or one fore-leg only with it. 6th, Head and one leg, or head alone. 7th, Calf lying on its back, its four legs folded nearly together, and close up to the cow's back; the head appearing, or doubled back, even with the ribs, on one side or other; the hind-leg perhaps appearing.

The following general rules are given by Mr. Lawrence:

Timely assistance before the cow is exhausted.

Extraction never to be attempted in an improper position.

Supple the hand and arm with warm water and fresh lard.

Examinations best made, the cow standing, and in the interval of pains.

In pulling at the feet, inclose the claws in the hand, that the horn may not bruise the cow.

Navel string bursting, and the usual flux of blood, of no consequence.

Instruments to be used only in the last resort, and by experienced and steady persons only.

The proper hook is of hard iron, four inches long, with a loop for the cord at the straight end.

In a natural position, if the cow should want help, the position of the calf may be ascertained after the waters have been seen. A cord ought to be in readiness to attach to the fore-legs of the calf, in order to assist each natural exertion. The head to be kept clear of obstruction.

Preternatural position. No. 1. as above. No attempt to turn the calf (this position being favourable for extraction), but use expedition, for fear it be suffocated. Press the haunches back with the palm of the hand, take hold of the bend of the hough of one leg, pull at it, and reach the foot; both feet may thus be brought forth. No. 2, reduce the head to its proper situation, between the fore-legs, either by hold of the nose, or the face-bone. A long arm is needful, which must be kept to the full extent in the body, that instant advantage may be taken of every throe, the fingers being properly fixed. No. 3, Gently move the calf back, and bring the head forth to the legs. No. 4. Push the calf back to find the head; pull at the nose; this requires address, but it is useless to employ force till the head be in its proper place. No. 5 and 6. Push the calf back against the shoulders and brisket; the feet will be found folded under the belly; bring the feet forward, one at a time, the hand being gently placed on the bend of the knee. Should the head be too much swelled and bruised to be returned, it must be skinned and amputated. Dissect in a straight line from the poll to the nose, force the skin back over the first joint of the neck, divide the head from the body, pushing the latter back to obtain hold of the knees. The loose skin must be previously wrapped over the ragged bone, and an assistant should have fast hold, in order to guide it clear of the haunch-bones of the cow, should it hitch there, put back instantly. No. 7, If one hind-leg appear, put it back; the calf cannot be brought forth with a hinder and fore-leg together, and the difference between the knee and hough will be immediately discovered. The head being doubled back, must of course be reduced to its proper place.

The cow being strong and quiet, the business may be effected with care and patience; but should the hook be positively necessary, hold must be taken, either in the sockets of the eyes, cavity of the ears, or in the jaw. The case of *dropsy* in the calf will be sufficiently apparent by its preternatural size; use the knife carefully, should that be necessary, to pierce the belly of the calf.

A late writer of good authority says, 'When every other plan has failed for turning the calf, so as to put him into a favourable position for delivery, the following has often succeeded: Let the cow be thrown down in a proper situation, and placed on her back; then, by means of ropes and a pulley attached to a beam above, let the hind parts be raised up, so as to be considerably higher than the fore parts: in this position the calf may be easily put back towards the bottom of the uterus, so as to admit of being turned, or his head and fore-legs brought forward without difficulty.'

There is a very material obstruction which frequently happens to the calving of cows. It is called a horning of the lye or calf-bed, when the passage of it is contracted into a very small circumference, insomuch, that at the full time of gestation, it will not admit so much as the smallest hand, and grows so sinewy or horned, as renders it utterly impossible for the cow to calve without assistance, and many cattle have died under this dreadful inconvenience, when it might have been easily prevented. But so little has been known hitherto of the diseases peculiar to black cattle, that many thousands have fallen victims to untimely death, that a simple remedy or operation might have saved.

In the case before observed, it must take a considerable length of time before it is contracted as it is often found; but no suspicion or dread can reasonably take place, until near the time when the beast has arrived at the end of nine months, her full time of bearing young, when they generally make a regular preparation, or falling of the parts of generation, for a few days or weeks before calving: but in cases of this hornedness of the calf-bed, it is observed that they are backward in making these necessary alterations preparatory to the approaching change; and when this is noticed, more than usual observation ought to be taken, for when they do not prepare in a regular manner, they seldom have the efforts of nature in due course, for the delivery of their burthen. But when the beast is observed sick for calving, and has reached the end of her time, and any dread of this apprehended, there is no danger or impropriety in searching with the hand, in order to be satisfied whether that part is open or grown up, as previously described: yet the greatest care is necessary that the inquiry be made with judgment, and the hand that is introduced must be well lathered with soap and water, or greased with tallow, fresh butter, or some such thing, that will not cause irritation in the neck of the womb.

Now, if it be found in the state described in any degree, and a certainty of the beast being at its full time, with the common sickness and symptoms for calving, no time should be lost until the animal be relieved. The difficulty greatly depends on knowing to what degree it is grown up: it is sometimes so strait as not to admit the end of a finger: but with some exertion, it may give so much way as that a small knife may be introduced, whose blade should not be above an inch and a half in length, and very sharp, with a hollow on the back part of the point, for the end of the fore-finger to guide the knife when cutting, and to cover the point and edge when introduced, which must be covered as much as possible with the hand. Its handle ought to be short, and the fore-finger of the operator should always be kept forward on the knife, to prevent any danger that might arise from the edge of it. The horny circle is sometimes so hard and gristly, that it takes more exertion than may have been expected from the nature of the place: but as soon as it is cut through, the beast will find a very material difference, and strive to void her burden if possible, when every exertion of art ought to be used for her relief. When the business is happily over, the wounded parts within must be taken care of, by providing one pint of rectified spirit of wine camphorated, to anoint the wound, and any other part which may have been exposed to the air, bruised, or over distended. This may be conveyed up the neck of the womb by a syringe, spunge, or linen rag filled with it, and carried thither, by a small hand well fomented with some of the foregoing articles for that purpose. Let the beast be kept moderately warm, and in a comfortable situation, allowing her at all times a plentiful supply of good, dry, and sweet litter.

This mode of managing, in preternatural contractions of the passage, is recommended by Mr. Rowlin; but much will always depend on the judicious observations of an experienced judge.

22. SWELLING OF THE UDDER.

This disease attacks cows about the time of calving, and is sometimes so considerable as to cause an abscess to form. As soon as it is observed, let the animal be bled freely, and take a pound of Epsom salt, dissolved in a quart of gruel, to which a little castor or linseed oil may be added. The swollen udder should be frequently fomented with a decoction of mallows, elder, or hemlock. The best method of doing this is to dip large woollen cloths in the hot decoction, and, after wringing, let them be applied so as to cover the whole udder: this process should be continued for some time, and repeated several times a day. When, by these means, the inflammation has been removed, some degree of hard, but not painful swelling, may remain; to disperse this, the following liniment may be rubbed on the part once or twice a day:

Linseed oil, - -	4½ ounces.
Oil of turpentine, -	1 ounce.
Liquor of ammonia, -	half an ounce.

Mixed.

Inflammation of the udder sometimes occurs in consequence of catching cold, or a CHILL, as it is more commonly termed; in this case, the appetite is diminished, the coat stares, the breathing is quickened, and there is some degree of fever. Here bleeding is generally necessary, at first, and the following warm laxative:

Common salt, - -	6 to 8 ounces.
Oil, or lard, - -	6 ounces.
Flour of mustard, -	1 ounce.
Whey, or water, -	1 quart.

Mixed.

The animal should be taken under cover, and fed with warm mashes of bran or malt. One ounce of nitre may be put into her water morning and evening.

23. CHAPS.

The udders of cows are sometimes chafed by rubbing against their thighs when they are cat-hammed, and go close-behind. Both the udder and thighs of the cow are sometimes quite raw and ulcerated. The best remedy in these cases, is to wash the parts well with warm soap and water, and afterwards bathe them frequently with a mixture of Goulard and camphorated spirits.

The teats of cows are sometimes *chapped*, which is commonly owing to want of cleanliness in the milkers. When this happens, the treatment recommended above for *chapping* may be followed; or if this does not succeed, the teats may be anointed with what is called *unguentum nutritum*. If the teats are very painful, the cracks may first be bathed with a little laudanum, and afterwards filled up with finely powdered prepared chalk.

When the udder is inflamed, and matter is collected, or, as country people say, 'The *yellows* is fallen into the udder,' the lowest part containing the matter should be opened, that the matter may run off freely. When this has been done, the part should be kept clean, and no matter allowed to lodge in the cavity, which should be syringed with warm water. To get rid of the matter completely, make an opening in the side of the teat, a little above its extremity, or the orifice through which the milk is squeezed out. There is no occasion for cramming tents into the cavity, or daubing the udder with filthy ointments; it is quite sufficient to bathe and syringe with warm water twice or three times a day, which will effectually prevent an accumulation of matter; and if the healing process goes on languidly, a mixture of spirit and water, or a solution of white vitriol, may be injected.

24. GRIPES.

Symptoms.—Cattle, particularly young cattle, are extremely subject to colic. It is first indicated by restlessness in the animal, often lying down, groaning or striking against the belly with the hind-feet or horns. The body is often swollen, which is most observable on the left side. The pulse is generally in its natural state. If proper remedies are not administered, the pain becomes more violent; and at length inflammation takes place, which is indicated by the pulse becoming very quick, and the ears, horns, and feet, cold: when this happens, the disorder most commonly terminates in death.

Causes.—This disease, in horned cattle, is generally the effect of costiveness, or a retention of food in the third stomach. Sometimes, however, it happens when the bowels are in a lax or natural state. Cows that are fed upon grains are very liable to this complaint; such, also, as are kept upon dry food are often attacked by it. When flatulent colic takes place independent of costiveness, it is generally occasioned by feeding greedily upon fresh succulent grass, or by drinking cold water when heated by exercise, and comes on rather suddenly; but, when it is caused by costiveness, the attack is generally more gradual.

Cure.—When the colic originates in costiveness, purging medicines are, of course, the essential remedy; but they should be combined with aromatics or stimulants, as in the following formulæ:

Barbadoes aloes, -	half an ounce.
Carbonat of potash, -	3 drachms.
Powdered ginger, -	half an ounce.
Water, - - -	1 pint,
Oil of turpentine, -	1 ounce.
Linseed oil, - -	8 ounces.

Mix, for one dose.

When the above medicine cannot be procured in time, the following may be substituted for it.

Common salt,	half a pound.
Sweet oil, linseed oil, or any kind of oil that is not very rancid, or even melted hog's lard, - -	half a pound.
Flour of mustard, -	1 ounce.
Water, - - -	1 quart.

To this a glass of spirit may be added.

If the animal is in good condition, or the inner surface of the eyelid is unusually red, she should be bled freely; but if the complaint is attended with looseness, or if the bowels are in their natural lax state, particularly if the animal appears rather weak, and the inner surface of the eyelid pale, the following carminative drink should be given, and no blood taken off.

Oil of turpentine, - -	1 ounce.
Tincture of opium, -	6 drachms.
Spirit of nitrous ether, -	2 ounces.
Water, - - - -	1 pint.

Mix, for one dose.

When the purging drink is found to be necessary, its operation may be promoted by clysters. It may not be unnecessary to observe, that when the colic is caused by feeding greedily upon grains, or any other kind of food, the cow must be fed cautiously for several days after, and take the following stomachic drink once or twice a day, in order to restore the tone or energy of the stomach:

Powdered ginger, - -	half an ounce.
Powdered gentian, - -	1 ounce.
Carbonet of ammonia, -	2 drachms,
Infusion of camomile flowers,	1 pint.

Mix, for one dose.

On the other hand, should the disease have been occasioned by costiveness, or feeding upon dry food, the state of the bowels must be attended to, after the animal has been relieved by the operation of the purgative drink; as the tendency to costiveness will probably continue, unless it is removed by a change of food. When this cannot be done, some salt should be mixed with the food, if the animal will eat it; if not, he should be drenched with three or four ounces of salt dissolved in water daily: this will serve to open his bowels in a slight degree, and increase his appetite for water, with which he should be freely supplied.

25. FOG-SICKNESS.

When cattle are put into a field of young clover or rich grass, especially if they have previously been kept on poor or dry fodder, they are apt to eat voraciously of their new repast, and the young succulent food, when received into the stomach, soon ferments, and produces such a quantity of air, as to swell the stomach to a violent and dangerous degree. Cattle thus affected are said to be *over-fed*, *hove*, or *blown*; or the affection of the stomach thus produced is called *over-feeding*, or sometimes *fog-sickness*. If not speedily relieved, the animal's stomach not unfrequently bursts, from the inability to evacuate the accumulated air; for there seems, in these cases, to be a constriction of the gullet, so that the air cannot escape upwards, while the number of stomachs, and the spasmodic contraction produced by the unusual distention, prevents its passage by the anus.

The necessity of speedily relieving the animal, prompted the employment of what must at first have been considered as a very desperate remedy; namely, stabbing the animal. An opening is made with a sharp pen-knife into the paunch, in the thin part between the last rib and the huckle bone; and through this the air rapidly escapes. Sometimes the barrel of a quill is inserted into the wound to prevent its closing before all the air that is produced during the fermentation of the food has escaped.

Stabbing the animal is a remedy that should not be had recourse to but on the most urgent necessity; as the wound can seldom be made with such nicety as not to wound some important organ, especially some large blood-vessel. Indeed frequently the distension of the stomach, and consequently of the skin and muscles of the belly is so great, that the moment the knife is introduced, a dreadful rent takes place, producing such a wound as may be attended with fatal consequences.

Happily this operation is not often necessary, as it is found that the administration of some internal stimulating medicines will check the fermentation of the green fodder, and promote the absorption of the extricated air. Many farmers have for some time given tar with this intention, administering an egg shell full to each beast; of late, however, the use of ardent spirits has been introduced, and it is found that a pint of whiskey or gin, mixed with an equal quantity of water, is the most efficacious remedy. Laudanum has also been recommended, but probably it is not superior to common spirits.

It has been the practice with some farmers, to introduce, on these occasions, the common rope employed in cases of choaking into the stomach, and move it up and down so as to produce a gradual evacuation of the air; but we should suppose that the evacuation produced in this way must be extremely slow.

Dr. Monro, senior, of Edinburgh, some years ago contrived an elastic tube, that might be introduced down the throat into the stomach of the animal, and thus speedily and effectually evacuate the air. The tube is to be composed of iron wire, as large as a common stocking wire, or about one sixteenth part of an inch diameter, twisted round a smooth iron rod, three-eighths of an inch diameter, in order to give it a cylindrical form; and after taking it off the rod, it is to be covered with smooth leather.

To the end of the tube, which is intended to be passed into the stomach, a brass pipe, two inches long, of the same size as the tube, and pierced with a number of large holes, is to be firmly connected.

To prevent the tube from bending too much, within the mouth or gullet in time of passing it down into the stomach, an iron wire, one-eighth of an inch diameter, and of the same length as the tube, is put within it, which is to be withdrawn when the tube has entered the stomach.

He has found that the space from the fore-teeth of the under jaw, to the bottom of the first stomach of a large ox, measures about six feet, and he has passed such a tube, five feet and nine inches long, into the gullet and stomach of a living ox. The tube ought therefore to be six feet long, that we may be sure of its answering in the largest oxen.

After the tube is passed into the stomach, it may be allowed to remain for any length of time; as when it is pressed to one side of the throat it does not intercept the breathing of the animal. The greatest part of the elastic and condensed fixed air, will be readily discharged through the tube; and if it be thought necessary, the remainder of it, or the superfluous drink, may be sucked out by a bellows fixed to the upper end of the tube, with a couple of valves, one at its muzzle, and the other at the side of it, so disposed as to allow the air to pass in the direction from the stomach upwards.

By means of such a tube, the air is not only more certainly discharged than by stabbing the animal; but the dangers avoided which the stabbing occasions, not so much by the irritation which the wound creates, as that the air, and the other contents of the stomach, getting into the cavity of the belly, between the containing parts and the bowels, excite such a degree of inflammation as frequently proves fatal to the animal. This tube may be also useful for the purpose of introducing stimulant medicines into the stomach, when the contraction at the upper orifice would prevent their being given without some such contrivance.

Mr. Blaine has simplified this mode of relief much, by the invention of an instrument, for which he was rewarded by the Society for the Encouragement of Arts with fifty guineas. This is simply a cane of considerable diameter, and six feet in length, for oxen; to which is affixed a knob of wood, at the end, to be introduced into the stomach. That for sheep is considerably smaller, and three feet long. This instrument, for its simplicity, is much to be preferred, as it is found to occasion the evacuation of the air as effectually as the other. In cases of emergency, and in a judicious hand, the flexible part of a common cart-whip might answer the end.

In performing this operation, an assistant is to lay hold of the cow's horn with one hand, and the part which divides the nostrils with the other. The operator is to take the tongue in his left hand, and with his right he is to force the instrument down the gullet. As soon as it enters the paunch, a good deal of air will rush out. The instrument may remain in the stomach, without injuring the animal, until the air is perfectly evacuated.

Any one, unaccustomed to handle cattle, would feel some difficulty in using the above instrument; but, if the horn be held firmly with the left hand, and the part which divides the nostrils be grasped firmly with the right hand, the cow will generally submit quietly to the operator.

When the animal has obtained some relief by these means, let one of the following drinks be given:

No. 1.

Powdered ginger, -	half an ounce.
Spirit of nitrous ether,	2 ounces.
Oil of peppermint, -	30 drops.
Warm water, - -	1 pint.

Mix, for one dose.

No. 2.

Powdered carraways, -	1 ounce.
Ginger, - - - -	2 drachms.
Warm ale, - - -	1 pint.

Mix.

No. 3.

Powdered gentian, - -	1 ounce.
Cascarilla bark, - -	2 drachms.
Warm ale, - - -	1 pint.

Mix.

An infusion of camomile flowers and ginger is also a good stomachic in such cases; and it might be made still better, perhaps, by infusing the ingredients in hot ale instead of water.

When cattle have suffered a severe attack of this disease, the stomach is generally weakened by it; great care, therefore, is necessary, in order to prevent a return. For several days after, they should be fed rather sparingly, or not allowed to eat much at one time; and every morning and evening, for three or four days, may take one of the above drenches.

26. CHOAKING.

Cattle may have a difficulty of swallowing from various causes; either from an unusual narrowness in the gullet or from the morsel attempted to be swallowed being too large. The latter very frequently happens to cattle who are fed upon turnips or potatoes; and the choaking thus produced sometimes proves very dangerous, as, if the obstruction is not speedily removed, the animal will die for want of breath. The method commonly employed among country farmers for *unchoaking* cattle, as they term it, is to thrust down the throat a large stiff rope, ravelled at the end, and well greased. This often succeeds, but it is a clumsy method; and if the rope, by having been long used, or becoming dry, should lose its stiffness, it will be bent in endeavouring to force down the obstruction; or, if the ravelled end be not pretty large, or the obstructing morsel of an irregular shape, the rope may pass between the side of the gullet and the obstruction, without this being removed. Several intelligent farmers have therefore laid aside the use of the rope, and have contrived an instrument similar to the probang employed by surgeons.

Mr. Alexander, and ingenious farmer in Tweeddale, has invented a useful instrument of this kind, which is described as follows:

Take three small canes, of the thickness of the little finger, or thereabouts, of the length of 5½ feet, that they may reach down the throat, and into the stomach of the largest ox. These canes are to be bound together by strong smooth twine rolled tightly about them (the circles of the twine touching each other) from top to bottom. Bees' wax is then to be rubbed along the twine, to fill up any inequalities, and the whole rod is to be well oiled before it is used. There is a round knob at each end, the larger 2½ inches in diameter for larger cattle; the other less for lesser cattle. These knobs are formed of the twine rolled hard, and when formed may be strengthened in their position, by being sewed by means of a shoemaker's awl or *brog*, and a waxed bristled thread, such as they employ. The thread knobs are made tapering up the canes from their broad extremity: but it must be remarked, that the surface of this extremity is not rounded like a clue, but hollowed into the form of a cup. The intention of this hollowed form is to make certain of catching hold of the obstructing body; as, if the knob was round, it might pass by it. After the knobs are formed, they are covered with soft leather, which by its flexibility will adapt itself to the hollow end of the knob as soon as it reaches an obstacle. The knobs must be securely fixed to the canes, for if they fall off, they leave an indigestible substance in the stomach. Such is Mr. Alexander's probang, the only obvious improvement on which is, to make the knobs of sponge, firmly fastened to the canes, by passing twine through holes bored in them, and adding at each end two or three bights of twine, for the purpose of catching hold of any obstacle, thus making the instrument almost exactly like a surgeon's probang. The sponge is preferable to the twine, as it will not be so liable to injure the animal's throat by its hardness, will adapt itself more readily to the form of the obstacle, and may be more firmly fixed to the canes.

27. Snores.

There sometimes takes place within the nostrils a gathering of thick clotted matter, which, when it comes to any considerable height, very much obstructs respiration, and produces a snivelling noise when the air passes through the nostrils. This affection is called the *snores*, or *snivels*, and is almost peculiar to cattle. It is sometimes mistaken for a disorder of the throat, where it is imagined there is some obstruction; but when this rattling noise is found to attend the breathing of cattle, it may generally be discovered whether or not it be the disease in question, by a careful inspection of the nostrils. The swelling thus produced in the nostrils generally goes on to suppuration, and when it breaks the animal is relieved. The object of our treatment must therefore be to hasten the suppuration, by the application of warm stimulating fomentations or liniments. A very common application, in these cases, is the oil of bays injected up into the nostrils; but perhaps the steam of warm water would answer every good purpose, and might be easily applied, by putting a warm bran mash into a canvas bag, and tying it to the animal's head; and this may be repeated till the imposthume breaks. The animal should, in the mean time, be kept in a well sheltered house, and should be fed on nourishing diet.

28. LOSS OF THE CUD.

Symptoms.—That acute kind of indigestion has been already described which comes on rather suddenly, from feeding greedily in rich succulent pasture, under the head *Fog Sickness*; the disease, however, we are now to notice, is of a different description. The earlier stages of this complaint are not marked by very striking symptoms. The animal has a dull or languid appearance, and generally a rough unhealthy coat and tight skin. The appetite is diminished, and at length he ceases to chew the cud. The eyes and mouth have generally a yellow appearance.

Causes.—Though this disease generally proceeds from over feeding in rich pastures, yet it is sometimes connected with a diseased state of the liver.

Cure.—To cure this disease, it should be attacked at an early period; for when the liver has become affected in a considerable degree, it terminates fatally. Should there be any appearance of costiveness, the following warm laxative is first to be given:

Barbadoes aloes,	half an ounce.
Castile soap,	6 drachms.
Ginger, - - -	3 drachms.
Cascarilla bark, - -	2 drachms.
Warm water, - -	1 pint.

Mix.

The bowels, however, are more commonly in a loose state, and the dung has an unhealthy appearance; in this case, let the following tonic drench be given morning and evening, and let the animal be kept in a warm sheltered situation.

Cascarilla bark, -	3 drachms.
Ginger, - - - -	3 drachms.
Carbonat of Soda,	2 drachms.

To be given in a pint of ale.

It may be necessary to repeat, that this, like most other internal diseases of cattle, may generally be removed by timely attention; but in attempting a cure after they have existed some time, a great deal of unnecessary expence is often incurred.

29. JAUNDICE, OR YELLOWS.

Symptoms.—This disease may be known, principally, by yellowness of the eyes and mouth; a dull or languid appearance, and debility; a loss of appetite also is a common symptom. It may be distinguished from the former disease by the costiveness which uniformly attends it, and by the animal appearing to be in more pain.

Causes.—The immediate cause of this disorder is an obstruction of the gall-pipe, commonly owing to the formation of gall-stones; but the primary cause is a diseased state of the liver.

Cure.—At the commencement of the disorder, a cure may generally be accomplished by giving the warm laxative directed for the foregoing complaint, and repeating it after an interval of five or six days, giving, in the intermediate time, the following drink, every morning and evening:

Castile soap, - -	half an ounce.
Venice turpentine, -	half an ounce.
Ginger, - - -	3 drachms.
Powdered gentian root,	1 ounce.

Rub the soap and turpentine together, in a mortar, until they are incorporated; then add gradually a pint of water, and afterwards the ginger and gentian.

In the more advanced stage of this disorder, the liver is generally so injured, as to render a cure impossible.

A respectable writer on this subject says, 'In cattle, a vomit of emetic tartar may be tried at the first appearance of the disease, as the effort of vomiting may assist in promoting the passage of the gall-stone. If, however, the disease should arise in consequence of previous inflammation of the liver, vomits will be of no use, and the best remedies will be mercurial purgatives with soap. The food should consist of succulent and watery substances, especially of fresh grass; as it is found that when cattle affected with this disease are sent to pasture, they commonly soon recover. Warm mashes of bran or malt should be given frequently, both to obviate costiveness, and as being good articles of diet. If the disease should continue obstinate, and the use of mercurial medicines should be found necessary, the animal must be confined within doors during night and bad weather. It will be proper, whenever the weather and other circumstances permit, to give the animal regular exercise in the open air; but if necessity obliges us to keep him within doors, the whole body, but especially the belly, should be well rubbed for a considerable time twice or thrice a day. This friction will be proper, even though regular exercise can be taken in the open air.

30. ABORTION.

Amongst the many accidents and disorders to which cattle are subject, abortion may be named, on which subject we will offer a few remarks.

Cows sometimes suffer abortion; or, as it is called, slip their calf, before the usual time of labour. This accident may be brought on by violent exercise, especially by leaping hedges or ditches; by sudden frights, knocks, or bruises; and it is also said that it may arise from bad smells, and ardent desire in the cow; but these latter causes are probably imaginary. It is advised by some to keep cows who have slipt their calves as free from having any communication with the rest of the cattle as possible, under the idea that the accident may become infectious; and it is declared that experience has shown, that without great care and management it may go through the whole stock, and even return the next season, if the same cattle are kept. We cannot vouch for the truth of these assertions; but, if true, the circumstance is very remarkable.

When a cow has slipt her young, unless this accident has been occasioned by great exertion, it is a proof that the animal is extremely weak, and she must be put on a more nourishing diet, and have strengthening remedies; but, in general, little is required after such an accident but rest, and perhaps a warm bran mash. The latter may be frequently given to cows during pregnancy, as costiveness may be a great means of producing abortion.

31. Cow-pox.

The symptoms and origin of this disease amongst cows have been briefly described by Dr. Jenner, in his publications on the subject. The first of these appeared in 1798, while Dr. Jenner was practising in Berkely in Gloucestershire, where he had an opportunity of frequently seeing the disease.

'In this dairy country,' says Dr. Jenner, 'a great number of cows are kept, and the office of milking is performed indiscriminately by men and maid servants. One of the former having been appointed to apply dressings to the heels of a horse affected with the grease, and, not paying due attention to cleanliness, incautiously bears his part in milking the cows with some particles of the infectious matter adhering to his fingers. When this is the case, it commonly happens that a disease is communicated to the cows, and from the cows to the dairy maids, which spreads through the farm, until most of the cattle and domestics feel its unpleasant consequences. This disease has obtained the name of the *cow-pox*. It appears on the nipples of the cows in the form of irregular pustules. At their first appearance they are commonly of a palish blue, or rather of a colour somewhat approaching to livid, and are surrounded by an erysipelatous inflammation. These pustules, unless a timely remedy be applied, frequently degenerate into phagedenic ulcers, which prove extremely troublesome. The animals become indisposed, and the secretion of milk is much lessened."

There sometimes appears another kind of eruption on the udder of the cow, which on a superficial view may be mistaken for cow-pox. It consists of a number of white blisters on the nipples, and these blisters are filled with a whitish serous fluid. They are to be distinguished from the pustules that take place in the cow-pox, by their not having the blueish colour of the latter, and by their never eating into the fleshy parts, being confined to the skin, and ending in scabs. This eruption also appears to be infectious, but not nearly in so great a degree as the true cow-pox.

Dr. Jenner considers this spurious eruption as being chiefly produced by the transition which is made by the cow, in the spring, from a poor diet to one that is more nourishing, by which the udder at this season becomes more than usually vascular for the supply of milk. There is, however, another sort of inflammation and pustules, which appears to be not uncommon in all the dairy counties in the west of England. A cow intended to be exposed for sale, and having naturally a small udder, is for a day or two previously neither milked by the milker, nor is her calf suffered to have access to her; thus the milk is preternaturally accumulated, and the udder and nipple become greatly distended. The consequences frequently are inflammation and pustular eruption.

As the eruption of the cow-pox disappears in a few days, little more is required than to keep the teats clean, and handle them as carefully as possible during milking.

32. CORDS.

It is well known in most breeding countries, that a great many calves die every year, of an unknown disease, with which they are affected very shortly after birth. The common name which this disease receives, in the northern parts of the kingdom, is *the cords;* and while its fatal and widely extended effects are the subject of just regret, the disease itself is looked on as incurable, and no pains are taken to investigate its nature, symptoms, and causes, and no remedies suggested, as a cure or preventive. Whatever be its nature, this disease is exceedingly dangerous, and so extremely rapid (terminating frequently in a night's time), that all means of relief are commonly useless even before it is observed.

Almost all calves, that are said to have died of the *cords*, appear, when they are opened up, exceedingly red, and the small leaders, or ligaments, are considerably swelled, and have some resemblance to strings passing through the internal parts, from which probably the disease has its name. Every symptom indicates a considerable degree of plethora, if not a very high degree of inflammation.

It is commonly observed, that calves are most liable to be affected during the first days, or weeks, after they are calved. If they outlive five or six weeks, they are seldom in any danger.

Calves that suck their mothers, we believe, it will be found, are not so liable to the disease as those who are fed by the hand.

The greatest number of calves who fall a sacrifice to this disease, if not the whole of them, are those who are closely confined to the house from their birth, without ever being exposed to the free open air without doors. It is a well known fact, that calves who are dropt without, and remain in the fields, are in little or no danger. Cows that are laid on to graze for beef frequently turn out to be in calf; and it is no uncommon thing to see them drop their calves in the midst of frost and snow, and yet these young creatures, if they can once get to their feet, without being frozen to the ground, are hearty and well. Calves, lambs, and foals, require exercise and fresh air; and nature directs them to take a great deal. It is astonishing to see with what force and vigour (particularly the calf), and how long, they will run. But this free, unconstrained, and severe exercise without doors, seems to be the very thing that makes them thrive, and to be necessary to their very existence.

The great object is to prevent this disease; and the following method of treating the new-born calves, practised by a correspondent of the Farmer's Magazine, seems to be attended with complete success.

The time when this gentlemen's cows are bulled is regularly noted down in a book; and when they are near calving, they are watched frequently night and day. As soon as the calf is dropped, it is received into a large basket or scull made of willows, with a handle at each end, and plenty of clean straw in it. It is then carried by two persons to the stall in the calf-house, where it is gently rubbed with straw. The calf-house is next to the cow-byre; and is fitted up with stalls like a stable, about three feet wide, and about five feet long. Every stall shuts in by itself, with a door and hinges, for fear of the calf lying back too far, to choke itself in its binding. As soon as the mother has had a little rest after calving, she is milked, and a little of the milk given to the calf as early as possible. If the weather is cold, and the mother long in giving milk, it is taken to the fire, and warmed in a pan until it is blood-warm, and then given to the calf; about six or eight gills, according to the size of the calf, and repeated four times in twenty four hours. As the calf gathers strength, the quantity may be increased; but too much milk at one time is as bad as too little, until it is a month or six weeks old. When the calf is able to stand, it is tied to a stake; as it is more in the power of the servant to give it milk in that situation, than when going about loose. If a calf gets cold milk, it is sure to bring on a trembling, and the *cords* or some other malady follows; which he has often seen exemplified amongst the neighbouring young stock.

33. WOUNDS.

The wounds of cattle are most commonly caused by goring each other with their horns, or by breaking over fences; and, when deep or extensive, are generally followed by considerable inflammation.

The treatment of wounds must depend in a great measure on the part where they are inflicted, and the form of the instrument that produced them. A clean cut made in the muscular parts is easily healed, by applying slips of sticking plaster as soon as possible, so as to keep the edges of the wound close together; or where plaster cannot readily be applied, by taking a stitch or two through the edges of the wound, and tying the strings gently together. When the edges are found to adhere, the strings must be cut away, and the holes which they made will soon fill up. All wounds should be made as clean as possible, before any attempt is made to heal them. Sometimes the wound is so situated that it will not admit of being sewed up; but in these cases we may in general pass silver or steel pins from the edges, at about an inch distance from each other, and twist a thread crosswise from one to the other, so as to form what is called the *twisted-suture*.

In all cases where sutures are used, it will be proper to apply a sticking plaster over the edges of the wound.

But this mode of treatment can be proper only in such superficial wounds where a flap of the skin is separated; and in this case, great care must be taken not to apply any stimulating fluid, as Clater advises. Should there be any dirt or other matter about the wound, it will be sufficient to wash it off with warm water.

When the wound is considerable, and some important parts have been injured, the irritating treatment commonly adopted by farriers often destroys the animal; and, in slighter wounds, their stimulating application tend rather to retard, than promote recovery. In deep and extensive wounds, affecting important parts, every method must be employed, as early as possible, to prevent a fatal inflammation from taking place. Bleeding is the first remedy; and, immediately after, let a purgative or laxative drink be given, and foment the part with a decoction of mallows, elder, or hemlock, until the inflammation has subsided.

When the inflammation occasioned by the wound has been thus removed, it will be proper to examine it with a probe, to ascertain whether any matter be confined or not; as, in that case, it may be necessary to enlarge the original wound, to give it vent, or make an opening in another more depending situation, that it may run off freely. Some stimulating application may also be proper at this period, such as a solution of blue vitriol; or,

Tincture of myrrh, - - -	2 ounces.
Sublimate, - - - -	12 grains.

Mix.

One part of oil of turpentine to two parts of sweet oil form a good digestive, as it is termed. And, if an ointment is preferred, take,

Hog's lard,	8 ounces.
Bees' wax,	1 ounce.
Common turpentine, -	6 ounces.

Melt them together; and, when taken from the fire, add one ounce of powdered verdigris; continue stirring the mixture until it is cold.

In deep wounds, or in such as the parts are much divided, sewing is highly improper. Wounds of the belly, through which the bowels pass out, are highly dangerous, and require the most delicate management. Dr. Clater has advised a variety of stimulating medicines to be applied to the bowel; among which we find camphor, oil of turpentine, and spirit of wine, tempered, however, with ointments, Goulard water, &c.; any of which except the water, must, we should suppose, produce a fatal inflammation of the part. The first thing to be done, when this accident happens, is to put back the bowel into the belly as tenderly as possible; but if any dirt, hair, or other matter be observed upon the gut, it must first be carefully washed off with warm water. When the bowel has been replaced, the wound must be stitched up by means of a crooked needle and threads doubled, or small twine, well waxed (with bees' wax): a roller, or bandage, is then to be applied. The animal is to be kept at rest, on a spare, opening diet, of grass or bran; and, if in any degree costive, a dose of castor oil may be given. The treatment of the wound is of little importance; the great object is to keep the bowel in its situation. It sometimes happens, that a great deal of air gets into the gut, after it has escaped from the belly, and so distends it, as to render it difficult, if not impracticable, to replace it through the original wound; when, after a careful and patient trial, this is found to be the case, the wound is to be enlarged, so as to allow of the gut being replaced. This must be done cautiously, the knife being guarded by the fore-finger.

Bleeding from wounds seldom proves dangerous in cattle, and, if left to nature, generally stops in a short time. Should it be thought necessary, however, to stop the bleeding, the most effectual method of doing it, next to that of tying the blood-vessel, is pressure by putting bolsters of tow or sponge on the bleeding part, and supporting it firmly with bandage. During the progress of the wound towards healing the new flesh often rises above the surface, or appears to be produced too luxuriantly; to check this, a little powdered blue vitriol, mixed with bole, may be sprinkled on the part.

34. Strains and Bruises.

When these accidents occur in a considerable degree, or if an important part has been injured, bleeding is highly proper. As inflammation is the common effect of these injuries, fomentations are at first the most proper applications; and, when the inflammation has subsided, the liniment recommended for swollen udder may be rubbed on the part two or three times a day. When any part of the limbs has been strained, so as to occasion lameness, if the lameness continues after this plan has been tried, it will be advisable to have recourse to a blister. In slight bruises, from the pressure of the yoke, or other causes, the following lotion is useful:

Goulard's extract,	half an ounce.
Vinegar, - -	4 ounces.
Water, - - -	1 pint.

Mix.

Having thus noticed those disorders and accidents which most commonly attack cattle, it will now be proper to describe the means of preserving their health.

35. COW-HOUSES, OR BYRES.

All that has been said on the necessity of room, light, air, and ventilation, in stables, is also applicable to byres. In order to avoid prolixity, we will describe a byre built by Mr. Jones, in the county of Cardigan, and which seems to afford a good model for buildings of this kind. The whole length of the building is fifty feet, the roof shelving, its chief height being fourteen feet, the lower extremities, one seven and a half, the other six feet. A stone wall, running up to the summit, parts the feeding-house from the other and smaller apartment, which is a receptacle for dung. Width of the feeding-house, nineteen feet within-side. Stalls each twelve feet long by four feet two inches wide. Gangway three feet and a half, at the heels and tails of the cattle, leading from the doors, the first door being for the cattle, the other for the attendants. Similar doors at the opposite ends of the building. Running water in troughs, with racks and mangers. The cattle lie on wooden platforms, perforated for the passage of the urine. The urine runs, and the dung is pushed through apertures in the wall, each of which is two feet square, and one between every two stalls. There are twelve wooden flaps, or windows, to give light and air to each stall. The dung pit is about twelve feet wide, sunk some feet deep in the earth, extending the whole length of the building. The walls are built partly with stone, and in part with wood, the roof with larch wood, as an experiment of its durability in that exposure.

According to Mr. Lawrence, the round or quadrangular form might, perhaps, either of them, be more economical as to space and materials for a building to contain a considerable number. The oxen would most conveniently stand around with their tails toward the wall, contrary to the usual practice, for the more easy throwing out the dung from a gangway, through apertures purposely made in the wall, into a pit, under cover, sunk around the building. The area within would, of course, be for feeding, and every necessary purpose of attendance. A store chamber above completes the building, the chief objection to the form of which is, the greater expence attendant upon the reversed position of the cattle, which is perhaps compensated by the great saving of labour, in the more easily getting rid of the dung. The gangway will in course, be sufficiently wide to admit the beasts to and from their stalls; the dung aperture in the wall may be closed in cold weather.

36. UTILITY OF TYING CATTLE.

It is of material importance in the wintering of young stock, to keep them more warm, and sheltered from wet, than is usually done, as by this means they thrive faster, with a less consumption of food, than in the contrary circumstances. This may be effected, either by tying them up in stalls, in houses for the purpose, or by keeping them in good sheds in well inclosed yards.

The question of feeding the cattle tied up, or loose in the yards, in winter, has not been yet decided. Each method has probably advantages. In the first, the cattle thrive better than when left at liberty to run about the yards. Mr. Marshall found that in Yorkshire, cattle kept tied up, and regularly fed with straw in a moderate proportion, did better than in the southern parts of the island, where left loose in the midst of greater plenty. Whether this effect is to be ascribed to the greater warmth, the resting better, or the being fed more regularly, *and eating with an appetite*, he cannot determine. Some experiments of Mr. Young's also lead to the conclusion that cattle stock thrive better when tied up. They likewise show that the practice of tying up is the only one that can be had recourse to, where straw is not in great plenty, and the quantity of the stock very inadequate to its consumption.

In the latter method there is the advantage of a large supply of manure, especially where the farmer has the convenience of litter. Where, however, the farmer has convenience, the former method is probably in general the most beneficial. In either mode of management, much attention is necessary to keeping the stock constantly supplied in an evenly proportioned manner, as in this way there will be great advantage, both in the saving of food, and the condition of the animals.

37. FEEDING BYRE.

It is now very generally understood, that the more cleanly and comfortably cattle are kept, and the cleaner and better the order in which their food is presented to them, the better they will thrive and consequently the sooner they will fatten, and the heavier they will be. With these views, and with the additional view of saving a greater proportion of the dung and urine of the cattle than is usually done, so as to increase the quantity of manure as much as possible, a byre has been constructed by Mr. Hunter of Blackness in Forfarshire, which has been found on trial, completely to answer the ends proposed. The byre consists of two apartments, an inner apartment, or byre for feeding the cattle, and an outer apartment or barn, for containing the turnips and fodder.

At the proper season when the turnips are completely ripened, and the turnip feeding commences, the turnips are gathered together on the field in large quantities, and two or three men, with coarse turnip knives made from old scythes, cut off the whole of the roots, carefully cleaning the turnips, at the same time, from any earth which may adhere to them. The turnips are then carted to the turnip barn, the door of which is wide enough to allow the cart to back in, and throw them down. Here the men with their turnip knives are again ready immediately to cut off the whole green tops or shaws of the turnips, and these green tops are immediately given to cows, young winterling cattle, sheep, &c. who readily eat them when fresh. The turnips, now quite clean, are piled up in one end of the barn like cannon balls, and will keep in excellent order for months together. Should the winter storm set in, a small quantity of clean dry straw laid over them, will effectually preserve them from being injured by the frost. The other end of the barn receives the straw and litter for the use of the byre. The advantages proposed to be derived from this method of treating the turnips are, 1. The preservation of a great many of the best turnips, which, if allowed to remain on the field during winter, are unavoidably spoiled by the effects of the weather, and the alternate operations of snow, rain, and frost. 2. The green tops being cut off fresh and good, are immediately consumed, in place of being entirely lost if allowed to remain on the field. 3. It saves much labour and trouble, both to men and horses, to lay in a stock of turnips at once in place of going to the field every day, whether good or bad, and when, as the fields are necessarily wet and soft, the horses, carts, and harness, are severely strained, and the fields poached and cut up.

Lastly, By having a couple of months supply of turnips in the barn, you are never under the necessity of using frosted turnips, which are often little better than lumps of ice. And even if you should not incline, or find it convenient, to lay in so large a stock of turnips at once, still you can take the advantage of any good fresh day, as it occurs, to add to your stock of turnips in the barn.

At right angles to the turnip barn stands the feeding byre, constructed as follows. At the distance of about three feet and a half from the great side wall of the byre, there are constructed on the ground, in a straight line, ten troughs for feeding ten large cattle; these are of hewn pavement on all sides, and at the bottom; and they are divided from each other by divisions, or bridges, likewise of hewn pavement. These troughs are so constructed, that there is a small and gradual declivity from the first or innermost, to the last and outermost one; and the bridges separating them being made with a small arch at the bottom, a pail or bucket of water poured in at the uppermost runs out at the undermost one, through a stone spout passing through the wall; and a sweep with the broom carries off the whole remains of the turnips, &c. rendering all the troughs quite clean and sweet. The whole food of the cattle is thus kept perfectly clean at all times.

In a line with the feeding troughs, and immediately over them, runs a large strong beam of wood, from one end of the byre to the other, which is strengthened by two strong upright supporters to the roof, placed at equal distances from the ends of the byre, and the main beam is again subdivided by the cattle stakes and chains, so as to keep each of the ten oxen opposite to his own feeding trough and stall.

The three and a half feet of space betwixt the feeding troughs and outer wall of the byre, lighted at the farther end by a glazed window, is the cattle-feeder's walk, who passes along it in front of the cattle, and, with a basket, deposits before each of the cattle the turnips into the feeding trough of each.

To prevent any of the cattle from choaking on small turnips, or pieces of large ones, as they are very apt to do, the chains at the stakes are contrived of such a length, that no ox can raise his head too high when eating; for in this way, it is observed, cattle are generaly choaked. However, in case it still should happen that an ox choaks on a turnip, the cattle man or feeder is provided with a ramrod, made of a piece of strong stiff rope, with a small round polished wooden head at the end of it; this he introduces into the mouth of the ox, and so gently knocks the turnips down his throat, without either difficulty or danger to the animal. That the cattle-feeder may be always at hand to attend his cattle, a small apartment, with a window in it, in which his bed is placed, is constructed immediately off the corner of the byre, so that he is ready, even in the night-time, in case of any accident happening, to give assistance.

At the distance of about six feet eight inches from the feeding troughs, and parallel to them, is the dung groop and urine gutter, neatly and substantially built with hewn stone. Here too, like the troughs, there is a gradual declivity from the inner and upper to the outer and lowest end; so that the moment the urine passes from the cattle, it runs to the lowest end of the gutter, whence it is conveyed through the outer wall of the byre in a large stone spout, and deposited in the urinarium outside of the wall. At this place is a large inclosed space, occupied as a compost dung-court. Here all sorts of stuff are collected for increasing the manure, such as fat earth, cleanings of roads, ditches, ponds, &c., rotten vegetables, &c.; and the urine from the byre being caused to run over all those collected together, which is done very easily by a couple of wooden spouts moved brckwards and forwards to the urinarrum at pleasure, renders the whole mass, in a short time, a rich compost dunghill; and this is done by the urine alone, which in general is totally lost. The dung of the byre again is cleaned out several times each day, at the two front doors of the byre opposite to the groop, and deposited in the dung-court; so that in this way too, the byre is kept in as good order as any stable, and the cattle as clean as horses. Along the edge of the dung-court a few low sheds are constructed, in which young beasts, sheep, or swine, &c. are kept; and these consume the refuse and remains of the turnips from the great feeding byre.

In the side wall of the byre, and opposite to the heads of the cattle, there are constructed three vents, or ventilators; these are placed at the distance of about two feet four inches from the ground in the inside of the byre, and come out immediately under the easing of the slates on the outside. The inside openings of these are about thirteen inches in length, seven in breadth, and nine in depth in the wall; and they serve two good purposes. 1. The breath of cattle being specifically lighter than atmospheric air, the consequence is, that in some byres, the cattle are kept in a constant heat and sweat, because their breath and heat have no way to escape; whereas, by means of the ventilators, the air of the byre is kept in proper circulation, which conduces as much to the health of the cattle as to the preservation of the walls and timber of the byre, by drying up the moisture produced from the breath and sweat of the cattle, which is found to injure those parts of the building.

38. FEEDING CATTLE.

The feeding of cattle is of considerable importance to the farmer, and has of late been much improved. Both the food and the manner of administering it must be different according to the age of the cattle, the season of the year, and the purposes for which the cattle are fed.

It has been well observed, in a late useful practical work, that in the winter the yearlings should 'be fed with hay and roots, either turnips, carrots, or potatoes; and they should be thoroughly well fed, and kept perfectly clean by means of litter. At this age it is a matter of great consequence to keep such young cattle as well as possible; for the contrary practice will inevitably stop their growth, which cannot be recovered by the best summer food. If hay is not to be had, good straw must be substituted; but then the roots should be given in greater plenty, and with more attention. To steers and horses two years old, the proper food is hay, if cheap, or straw, with baits of turnips, cabbages, &c.'

Mr. Donaldson thinks the advantages of green winter food for live stock so great, that there is no way in which it can be applied with greater benefit than 'by giving the young cattle a daily allowance during the first two or three winters.' Whenever straw is employed as fodder for young stock, without the above sorts of food if it be not very good, or slightly mixed with some grassy material, a little hay should always be blended with it, in order that it may be preserved in proper condition. It is also of consequence that the animals be served with this sort of fodder in a regular manner, as where too much is given at a time, Mr. Marshall has remarked that they do not thrive so well.

The following observations of Sir John Sinclair merit every attention:

'Some intelligent graziers recommend the following mode of feeding and fattening cattle. Suppose there are four inclosures, of from six to ten acres each; one of them should be kept quite free from stock till the grass has got up; and then the prime or falling cattle should be put into it, that they may get the best of the food; the second best should then follow; and the young store after all; making the whole feed over the four inclosures in succession, as follows:

1st Inclosure.	*Free from stock, till ready for the best cattle.*
2d ditto.	*For the best cattle, till sent to No. 1.*
3d ditto.	*For the second best, till sent to No. 2.*
4th ditto.	*For the young cattle, till sent to No. 3.*

No. 4 is then kept free from stock till the grass gets up, and it is ready for the prime cattle. The proper size of inclosures has never yet been ascertained by experiment; probably from ten to thirty acres is the best; but the size should be various, as small ones are better calculated for grass, and large ones for corn. Probably the best plan to adopt is, to feed cattle entirely in the house, or *soiling* them as it is technically called. In that case small inclosures must be preferred, as the shelter they afford is extremely favourable to the growth of the herbage.

The larger a bullock is, he must take the more food to support him. It is desirable to change his food often, and to give him frequently, but little at a time, which makes him more eager to eat. After his kidnies are covered with fat, he will take less meat every week. It is better, therefore, to ascertain the quantity he eats by the week than by the day.

Fatting cattle to be sold immediately from the farmer's house, and not sent to market, should be kept moderately warm. If kept too hot, it makes them perspire, and their skins to itch: this vexes them, and they rub themselves against any wall or post within their reach, which is much against quick feeding. Currying and combing them are useful practices; and washing them, at least once a week, is of great service. Bleeding is now exploded, as an old and unnecessary practice.

The supposed necessity of beginning to feed oxen at an early age, is a great objection to their being generally used, as they are hardly trained properly to work before it is thought necessary to fatten them, after which they do very little work; but in consequence of the improved mode of fattening by oil-cake, &c. there is no difficulty to fatten oxen, even at twelve years of age, which is a material circumstance in their favour.

The method of giving cows their food by the milk-farmers in the vicinity of the metropolis, where this business is carried on upon the most extensive scale, is thus stated in the valuable Agricultural Survey of that district. "During the night, the cows are confined in stalls; about three o'clock in the morning, each cow has a half-bushel basket of grains; when the milking is finished, a bushel basket of turnips is given to each cow; and very soon afterwards they have an allotment, in the proportion of one buss to ten cows, of the most grassy and soft meadow hay, which had been the most early mown, and cured of the greenest colour. These several feedings are generally made before eight o'clock in the morning, at which time the cows are turned into the cow-yard. About twelve o'clock they are again confined to their stalls, and served with the same quantity as they had in the morning. When the afternoon milking, which continues till near three, is finished, the cows are again served with the same quantity of turnips, and about an hour afterwards with the same distribution of hay, as before described. This mode of feeding generally continues during the turnip season, which is from the month of September to the month of May. During the other months of the year they are fed with grains, cabbages, tares, and the other foregoing proportion of second cut meadow hay, and are continued to be fed with the same regularity until they are turned out to grass, when they continue in the field all night; and even during this season they are frequently fed with grains.

As the grains employed in feeding cattle cannot always be procured fresh as they are wanted, it becomes a desirable object to preserve them for a length of time. They are preserved in some places by putting them into pits dug in the earth, into which they are trodden down, and afterwards covered to a moderate depth with dry earth. In this way being defended from the action of the air, and thus prevented from fermenting, they may be kept for a considerable time during the months of summer, when brewing is not carrying on: they may also be kept by pressing them down into casks placed upon stands, so as to elevate them a little from the ground, and having their bottoms pierced with holes, to carry off the superabundant moisture.

Mr. Curwen of Workington was the first who demonstrated, by actual extensive experiment, the utility of stall feeding dairy cows. He combined steamed chaff and oil-cake with different sorts of green food, and found that, by giving a middle-sized cow two stones of green food and two of boiled chaff, with two pounds of ground oil-cake and eight pounds of straw, the daily expence of her keep was only 5½*d*. The oil-cake he found to be much more productive of milk when given with steamed chaff, than when employed without it. Varying their food from time to time is found to be of much advantage to cows; and this may probably arise from the additional relish with which the animal eats, or from the superior excitement of a new stimulus on the different secretions.

In some parts of the kingdom, the whole attention of the farmer is dedicated to suckling, or, in other words, to feeding calves, for supplying the market with veal. In Essex, this plan is reckoned more profitable than the dairy, and next to grazing. But the profit there must depend much upon the immediate neighbourhood of that country to so great and certain a market as London.

The particulars connected with this branch of rural economy will, it is probable, be fully detailed in the improved Agricultural Survey of Essex, in so far as regards that and the neighbouring districts. But as the mode of suckling adopted in some parts of Scotland is extremely different, it may not be improper to give a short account of it in this place. As soon as the calf is dropped, it is put into a box made of coarse boards, four feet and a half or five feet long, and four feet or four feet and a half high, and about two feet wide, according to the size of the calf. The boards are not put so close but that a sufficient quantity of air is admitted; light is, however, carefully excluded; and the box has a cover for that purpose. The box stands on four feet, which, at one end, are four inches high, but at the other only two inches; and, as there are holes at the bottom, all wetness is drained off. The bottom is also covered with straw or hay, which is changed twice a week. For seven or eight days, milk is but cautiously given, for unless a calf is fed moderately at first, it is apt to take a loathing to its food. It should be bled in about ten days; and, afterwards, as much milk given it fresh from the cow, either twice or thrice a day, as it will take. The bleeding should be repeated once a week; and at all times when a calf loathes its milk, and does not feed well, bleeding ought to be repeated. These frequent bleedings prevent diseases from plethora, to which calves are subject, even when not fed so high, and still more so when they are. A large piece of chalk should be hung up in the box, which the calf will lick occasionally: this contributes nothing to the whiteness of the veal; but it amuses the animal, and corrects that acidity in the stomach which might otherwise be engendered, and which certainly often takes place. A cow calf is reckoned the best veal; if a bull calf is suckled, he ought to be cut when about a week old, otherwise the veal will neither be so good nor so white. By this mode of treatment calves are kept clean, quiet, warm, and dry; the veal they furnish is excellent, and they are soon ready for the market; and, on the whole, it seems to be preferable to the practice of stupifying them with spirits, or with laudanum, so common in other places where a different system is pursued.

It will now be proper to make some observations on the different breeds of cattle, and to point out the best and most approved form of a bull proper for breeding from.

39. The Bull.

The head of the bull should be rather long, and muzzle fine; his eyes lively and prominent; his ears long and thin; his horns white; his neck rising with a gentle curve from the shoulders, and small and fine where it joins the head; his shoulders moderately broad at the top, joining full to his chine and chest backwards, and to the neck-vein forwards; his bosom open; breast broad, and projecting well before his legs; his arms or fore-thighs muscular, and tapering to his knee; his legs straight, clean, and very fine boned; his chine and chest so full as to leave no hollows behind the shoulders; the plates strong, to keep his belly from sinking below the level of his breast; his back or loin broad, straight, and flat; his ribs rising one above another, in such a manner that the last rib shall be rather the highest, leaving only a small space to the hips or hooks, the whole forming a round or barrel-like carcase; his hips should be wide placed, round or globular, and a little higher than the back; the quarters (from the hip to the rump) long, and instead of being square, as recommended by some, they should taper gradually from the hips backward, and the turls or pott-bones not in the least protuberant; rumps close to the tail; the tail broad, well haired, and set on so high as to be in the same horizontal line with his back.

40. THE SHORT-HORNED, OR DUTCH BREED.

The short-horned, or Dutch kind, differ from the other breeds in the shortness of their horns, and in being wider and thicker in their form, or mould, consequently feed to the most weight, in affording by much the greatest quantity of tallow when fattened, in having very thin hides, and much less hair upon them than any other breed (Alderneys excepted); but the most essential difference consists in the quantity of milk they give beyond any other breed. The great quantity of milk, thinness of their hides, and little hair, is probably the reason why they are tenderer than the other kinds. Alderneys excepted.

It is said of this kind, that they eat more food than any of the other breeds; nor shall we wonder at this, when we consider that they excel in these three valuable particulars, viz. in affording the greatest quantity of beef, tallow, and milk. Their colours are much varied; but the generality are red and white mixed, or what the breeders call *flecked*, and, when properly mixed, is a very pleasing and agreeable colour.

There are many reasons for thinking this breed has been imported from the continent. First, because they are still in many places called the *Dutch breed.* Secondly, because we find very few of these cattle any where in this island, except along the eastern coast, facing those parts of the continent where the same kind of cattle are still bred, and reaching from the southern extremity of Lincolnshire to the borders of Scotland. The long horns and these have met upon the mountains which separate Yorkshire from Lancashire, &c., and, by crossing, have produced a mixed breed, called *half long-horns*; a very heavy, strong, and not unuseful kind of cattle; but we do not find that the one kind have spread further west, nor the others further east.

'This breed,' says Mr. Culley, 'like most others, is better and worse in different districts; not so much, I apprehend, from the good or bad quality of the land, as from a want of attention in the breeders. In Lincolnshire (which is the farthest south that we meet with any number of this kind of cattle) they are, in general, more subject to lyer, or black flesh, than those bred further north; and in that rich part of Yorkshire called Holderness, they are much the same as those south of the Humber, of which we have been speaking. It is probable that they had either stuck more to the lyery black-beefed kind, than their more northern neighbours, at that unfortunate period, when they were imported from the continent, or that the latter had seen their error sooner. But, from whatever cause this happened, it is a fact, that as soon as we cross the Yorkshire wolds northward, we find this breed alter for the better; they become finer in the bone, in the carcase, and, in a great measure free from that disagreeable lyery sort which has brought such an odium upon this (perhaps) *most valuable breed*. When you reach that fine country on both sides the river Tees, you are then in the centre of this breed of cattle; a country that has been long eminent for good stock of all kinds.

41. THE DEVONSHIRE CATTLE.

The Devonshire cattle are said to be found in the greatest purity, and of the best kind, in the vicinity of Barnstaple; these are of a high red colour (if any white spots they reckon the breed impure, particularly if those spots run into one another), with a light dun ring round the eye, and the muzzle of the same colour; fine in the bone, clean in the neck, horns of a medium length bent upwards, thin faced and fine in the chops, wide in the hips, a tolerable barrel, but rather flat on the sides, tail small and set on very high; they are thin skinned, and silky in handling, feed at an early age, or arrive at maturity sooner than most other breeds; they are well fitted for draught, both as to hardiness, quick movement, and their shoulder points beautifully fitted for the braham or collar.

42. THE SUSSEX AND HEREFORDSHIRE CATTLE.

The Sussex and Herefordshire cattle are varieties of the Devonshire, of a greater size; the Herefordshire being the largest. The colour is red, fine hair, and very thin skin, neck and head clean, horns neither long nor short, rather turning up at the points; in general well made in the hind quarters, wide across the hips, rump, and sirloin, but narrow on the chine; tolerably straight along the back, ribs or sides lying too flat, thin in the thigh, and bone not large.

43. THE LONG-HORNED OR LANCASHIRE KIND.

The long-horned or Lancashire kind are distinguished from others by the length of their horns, the thickness and firm texture of their hides, the length and closeness of their hair, the large size of their hoofs, and coarse, leathery, thick necks; they likewise are deeper made in their fore-quarters, and lighter in their hind-quarters, than the other breeds in general; they are narrower in their shape, less in point of weight than the short-horns, though better weighers in proportion to their size, and give considerably less milk, though it is said to afford more cream in proportion.

They are more varied in colour than any of the other breeds; but whatever the colour be, they have, in general, a white streak along their back, which the breeders term *finched*, and mostly a white spot on the inside of the hough.

This breed is understood by graziers to be in general rather slow feeders, except that particular kind selected and recommended by Mr. Bakewell; these are said to eat less food than the others, to become remarkably fat in a short space of time, and to lay their fat on the most valuable parts, but have little tallow in them when killed; and when used in the dairy give very little milk. This variety also differs from the rest of the long-horned cattle, in having very fine, clean, small bones in their legs, and thin hides.

The kind of cattle most esteemed before Mr. Bakewell's day, were the large, long-bodied, big-boned, coarse, flat-sided kind, and often lyery or black-fleshed. On the contrary, this discerning breeder introduced a middle-sized, clean, small-boned, round-carcased, kindly-looking cattle, and inclined to be fat.

44. The Galloway Breed.

The Galloway breed, or polled cattle, are a very valuable breed, and seem to be, in weight and size, as much less than the long-horns, as these are than the short-horns. They generally weigh from 40 to 60 stone; some particular ones reach 70 and upwards. But their most essential difference from every other breed of cattle is, in having no horns at all; some few indeed (in every other respect polls) have two little unmeaning horns, from two to four inches long, hanging down loose from the same parts that other cattle's horns grow, and are joined to the head by a little loose skin and flesh. In most other respects (except wanting horns) these cattle resemble the long-horns, both in colour and shape; only they are shorter in their form, which probably makes them weigh less. Their hides seem to be in a medium between the two last mentioned breeds, not so thick as the long-horns, nor so thin as the short-horns; but, like the best feeding kind of long-horns, they lay their fat upon the most valuable parts, and their beef is well marbled, or mixed with fat.

45. SUFFOLK DUNS.

Suffolk duns are so called from their being the prevailing kind of neat cattle in the county of Suffolk, and which some may think a distinct species, but is more probably a variety of the Galloway breed, which might easily take place, from the great connexion that has long subsisted between the Scotch Galloway drovers of cattle, and the Suffolk and Norfolk feeders or graziers of them. Both kinds are in general polled; and though the Suffolks are almost all light duns, while the others are of various colours, yet this might at first proceed from a partiality to that colour. But from whatever place or cause this variety took its rise, they are at present a very useful kind of little cattle, particularly for the dairy; and great numbers of them are employed in that line in some parts of Suffolk, where perhaps the best butter and the worst cheese in the kingdom are made. The cows give great quantities of milk.

46. THE KYLOES.

The kyloes are still less in proportion to the polled cattle than they are to the long-horns: this breed are also covered with a long close coat of hair, like the polls and long-horns; and, like these, their beef is fine-grained, well flavoured, and mixed or marbled, but not so handsome on the outside of the beef when killed, being not of so bright a colour, and often spotted with black, even upon the best parts, except when made very fat. When grazed, they feed very readily; their weight in general being from 20 to 35 stone; some particular ones reach to more than 40 stone. The most prevalent colour is black, some are brindled or dun; but the breeders here, like those in Galloway, prefer the black ones.

These hardy animals are in possession of all that extensive and mountainous country called the Highlands of Scotland (together with the Western Isles), bounded on all sides by the sea and the Grampian hills, the latter of which begin on the north side of the Frith of Clyde, and run eastward into the sea near Aberdeen.

All the Lowlands of Scotland, except Galloway, have a mixed breed of cattle: towards Cumberland, they are half long-horns half polls; on the borders of Northumberland, they are mixed with short-horns, until you reach near Teviotdale, where they become altogether a coarse kind of short-horned, or what the Yorkshire jobbers call *runts*, except a few pretty good short-horned cattle, bred in that pleasant and fine country, the Tweedside. This same kind of *runtish* coarse breed, continues all the way to the Frith of Forth. Crossing this narrow sea into Fifeshire, you would at first imagine the Fife cattle a distinct breed, from their upright white horns, being exceedingly light-lyered, and thin-thighed; but it is only from their being more nearly allied to the kyloes, and consequently less of the coarse kind of short-horns in them. The cattle all along this coast continue to change more and more, growing still less, until, upon the edges of the mountains, they become quite of the kyloe kind; but still much inferior to that pure, unmixed, valuable breed of kyloes, which we meet with in the more northern and western Highlands and all the Isles, but particularly in the isle of Skye, and that tract of country called Kintail. It is in these two districts that you meet with the native breed of kyloes; a hardy, industrious, and excellent breed of cattle, calculated in every respect to thrive in a cold, exposed, mountainous country, and better adapted to the cold regions where they are bred, than any other kind we are acquainted with.

47. THE ALDERNEY BREED.

The Alderney breed is only to be met with about the seats of our nobility and gentry, upon account of their giving exceeding rich milk, to support the luxury of the tea-table, &c. But this breed is too delicate and tender ever to be much attended to by our British farmers, because they are not able to bear the cold of this island, particularly the northmost parts of it. They are very fine-boned in general, light red or yellow in colour, and their beef generally yellow or very high coloured, though very fine in the grain, and well flavoured. They make themselves very fat; and none of them in the least subject to lyer, or black flesh.

48. VALUE OF DIFFERENT BREEDS.

The most general breeds of cattle are the short-horns and the long-horns. Mr. Culley, in speaking of their comparative merits, says, 'The long-horns excel in the thickness and firm texture of the hide, in the length and closeness of the hair, in their beef being finer grained, and more mixed and marbled than that of the short-horns, in weighing more in proportion to their size, and in giving richer milk; but they are inferior to the short-horns, in giving a less quantity of milk, in weighing less upon the whole, in affording less tallow when killed, in being generally slower feeders, and in being coarser made, and more leathery or bullish in the under side of the neck. In few words, the long-horns excel in hide, hair, and quality of the beef; the short-horns in the quantity of beef, tallow, and milk. Each breed have long had, and probably may have, their particular advocates; but if I may hazard a conjecture, is it not probable that both kinds may have their particular advantages in different situations? Why not the thick, firm hides, and long close-set hair of the one kind, be a protection and security against those impetuous winds and heavy rains to which the west coast of this island is so subject; while the more regular seasons and mild climate upon the east coast, are more suitable to the constitutions of the short-horns? When I say the long-horns excel the short-horns in the quality of the beef, I mean, that preference is only due to the particular variety of long-horns taken notice of before, as selected, improved, and recommended by that attentive breeder, Mr. Bakewell; for as to the long-horned breed in common, I am inclined to think their beef rather inferior, than superior, to that of the generality of short-horns; and there is little doubt but a breed of short-horned cattle might be selected, *equal*, if not *superior*, to even that very kindly-fleshed sort of Mr. Bakewell's; provided any able breeder, or body of breeders, would pay as much attention to these, as Mr. Bakewell and his neighbours have done to the long-horns. But it has hitherto been the misfortune of the short-horned breeders to pursue the largest and biggest boned ones for the best, without considering, that those are the best that pay the most money for a given quantity of food. However, the ideas of our short-horned breeders being now more enlarged, and their minds more open to conviction, we may hope in a few years to see great improvements made in that breed of cattle.

But notwithstanding these two breeds have hitherto been in possesion of the best part of the island, yet I am inclined to think that the Galloway cattle, and even the kyloes, might be bred with advantage in many situations, so as to be more profitable than either the short-horns or the long-horns: I have a very high opinion of both these breeds of cattle as true quick feeders, and being kindly-fleshed, or excellent eating beef, which character they have established in the first market in the island.

My readers will in general agree with me, that kyloes are better adapted to cold, exposed, heathy mountains, than any other breed we have. I have before hinted, that particular breeds are probably best adapted to particular situations, and would recommend to breeders of *cattle* to find out which breed is the most profitable and best suited to their situations, and endeavour to improve that breed to the utmost, rather than try to unite the particular qualities of two or more distinct breeds by crossing, which is a precarious practice; for we generally find the produce inherit the coarseness of both breeds, and rarely attain the good properties which the pure distinct breeds individually possess.'

49. THE DAIRY.

The dairy system is perhaps the most profitable, as well as the most pleasing, of all the parts of husbandry. It was certainly the earliest. Herbage may be converted into human food, either in the form of flesh or of milk; but it is calculated that a much larger quantity of human food will be produced from the same quantity of herbage in the latter case than in the former. The herbage that would be sufficient to add 112 pounds to the weight of an ox, would, if employed in feeding cows, afford 450 English gallons of milk. This, if made into cheese, which is not the most advantageous way of consuming milk, would produce 460 pounds, besides the flesh that might be obtained by feeding hogs with the whey. The 112 pounds of beef, at the rate of 8s. a stone of 14 pounds, would amount to 8*l.* 4*s.*; but the 430 pounds of cheese, at 12*s.* a stone of 24 pounds, would bring more than 10*l.* 10*s.* The trouble and expence, however, requisite to produce the cheese, would be greater than what would attend the production of the beef.

In the erection of such buildings as are necessary for dairy purposes, two things ought always to be kept carefully in view,—conveniency of situation, and the preservation of a proper temperature. If the buildings are inconveniently situated, much labour will be lost; and if the air in them be either too hot or too cold, no process will go on as it should do. Their size will be proportioned to the number of cows kept, and their interior arrangement to the business intended to be carried on, whether this be cheese-making, butter-making, or merely the preservation of milk for sale. A dairy-house for forty cows may be 20 feet by 16, and for 100 cows 40 feet by 30. These are the usual proportions in the county of Gloucester. Ornament is sometimes studied in the erection of a dairy-house; and this, when it happens to be the case, will of course regulate in a great measure the situation of the building.

A butter dairy, when well constructed, consists of three apartments or rooms; one for depositing the milk, one for performing the operation of churning, and another for containing and cleaning the necessary utensils. A cheese dairy should consist of four rooms; a milk room as before, a room for making and pressing the cheese, another for the process of salting, and a fourth for stowing and preserving the cheeses, till they are ready to be brought to market. This last may be conveniently placed as a sort of loft over the other three. The milk dairy properly requires only two apartments; one for the milk, and the other for serving it out, scalding and cleaning the different utensils. Temperature in a dairy is of the first importance; for, if too much heat be admitted, the milk will quickly become sour; and if too cold an atmosphere prevails, neither butter nor cheese making can be carried on with success.

50. HEATING THE DAIRY.

Different plans have been proposed for securing a proper degree of heat. Double walls and roof have been recommended by Dr. Anderson; others have proposed hollow walls; and Mr. Loudon, in his Treatise on Country Residences, thinks that, for common purposes, a vacuity of eight or ten inches, left betwixt the wall and the lath and plaster, will be sufficient. A fountain, or *jet d'eau*, where such can be commanded, will always be a very agreeable and convenient acquisition in a dairy. Mr. Marshall, who has paid much attention to this subject, advises that the walls should be at least six feet thick, a foot on the inside to be of brick or stone, the outside to be constructed of sod, and the space between to be closely filled with earth. The roof, he says, should be of thatch, three feet thick at the least, and should project completely over the walls on each side. The materials of such a building being all bad conductors of heat, it would, he conceives, if provided with double doors, naturally preserve in this climate a temperature of about 50 to 55 degrees of Fahrenheit at all seasons of the year. But as the milk itself, when brought in warm, would naturally tend in summer to raise the temperature too high, an ice house is recommended to be attached to the dairy, of a simple and ingenious construction. A small quantity of ice placed when necessary in the milk room, would soon lower the temperature to any degree that might be wanted; and if the cold in winter should become too great, a barrel of hot water close stopped, or a few hot bricks placed on the floor or table of the milk room, would readily counteract its effects. A chafing-dish with burning coals should never be used, as it is apt to communicate a bad taste to the milk. Many other simple and cheap forms of dairy-houses are found to answer well. Mr. Marshall tells us, that in Wiltshire the rooms of the dairies have commonly outer doors, which open under a penthouse or lean-to shed. This he considers as a great advantage, for it communicates, by affording shade, a beneficial degree of coolness to the whole building.

51. Dairy Utensils.

The utensils required in a dairy are principally the following: milk-pails, milk-strainers or sieves, milk-bowls, coolers or pans, milk-skeels or creaming dishes, lading dishes, skimming dishes, cheese ladders, cheese vats, cheese presses, and churns. The expence of all which must evidently vary in different situations; but it is believed that a sufficient assortment of them for a dairy of twenty cows may, in most cases, be provided for 25*l.* or 30*l.* Wood has, in general, been employed in their construction, and is probably, upon the whole, the most eligible material. Lead, brass, and copper, are altogether inadmissable; for the acid contained in milk (which is now known to be the acetic) combines with these metals, and forms with them poisonous compounds. The same may be said of earthen vessels glazed with lead; and it is obvious that true porcelain, or glass, can never come into general use for dairy purposes. Cast iron itself is far from being unobjectionable, because, though the acid of milk does not form with iron a compound that is poisonous, it forms with it one which may, in a considerable degree, alter the taste and quality of dairy products. The least objectionable of all the metallic milk dishes, are probably those which have been lately invented by Mr. Baird of the Shotts iron works, in Linlithgowshire. Sir John Sinclair pronounces their invention, 'one of the greatest improvements that has lately taken place in regard to dairy management.'

It has been lately found, that slate makes very good milk coolers; and in some of the midland counties of England, the common flag, or transition slate, has been employed for this purpose.

52. Milch Cows.

A proper choice of cows is of the greatest consequence, because certain species of this animal, as well as certain individuals of the same species, afford vastly more abundant and richer milk than others.

Short-horned cows yield much milk: the long-horned give less, but the cream is more abundant and richer. The same quantity of the milk also yields a greater proportion of cheese. The polled or Galloway cows are excellent milkers, and their milk is rich. The Suffolk duns are much esteemed for the abundance of their milk, and the excellence of the butter it produces. Two-thirds of these, with one-third of the small Alderney or French cow, (mixing the milk,) are recommended by some as the best dairy stock that can be kept. Ayrshire, or Kyle cows, are much esteemed in Scotland; and in England the improved breed of the long-horned cattle, by Mr. Bakewell of Dishly in Leicestershire, is highly prized in many dairy districts. Every judicious selector, however, will always, in making his choice, keep in view not only the different sorts and individuals of the animal, but also the nature of the farm on which his cows are to be put, and the sort of manufactured produce he is anxious to bring to market. The best age for a milk cow is betwixt four or five, and ten. When old she will give more milk, but it is of an inferior quality, and she is less easily supported.

53. DAIRY FARMING.

The greatest dairy farms in Britain are found in Cheshire, Gloucestershire, Buckinghamshire, Essex, Cambridgeshire, Dorset, and Suffolk, some of the midland counties, and in Ayrshire. Essex, Cambridgeshire, Suffolk, and Dorset, are chiefly famed for butter, the rest for cheese.

Mr. Ralston of Wigtonshire, according to Sir. John Sinclair, has at present the largest dairy concern in Scotland. He keeps about 200 milch cows. They are divided into lots of ten or twelve to each byre or cow-house, and a dairy-maid is appointed to every fifteen cows. She is allowed an assistant at milking, procured from a neighbouring village, at 1*s.* per week. To stimulate exertion, Mr. Ralston gives a premium of two guineas to the dairy-maid who has most distinguished herself for management; and, to enable him to make a fair estimate of their comparative merits, they are appointed daily, in regular succession, to different lots of cows.

The cows are never fed out of doors till the grass has risen, to afford them a full bite. In dry and hot weather, they are housed, and fed on cut grass from six in the morning till six at night; when they are turned out to pasture for the other twelve hours. During bad weather, they are housed both night and day, and fed plentifully with turnips, potatoes, or other green food. Chaff, oats, and potatoes, are boiled for them after calving; and they are generally fed on rye-grass hay during the latter part of the spring.

Mr. Ralston says, that, about three years ago, every cow on his farm yielded annually her own weight of Dunlop cheese, which then sold at 14*s.* or 15*s.* per stone; and that he would not keep a cow that did not, in the course of the year, produce her own weight of cheese, and that would sell for the price of the cow. Sir John Sinclair states the net profit of a milk cow, in the neighbourhood of Edinburgh, at 23*l*. per. annum. Where the breeding system is followed, the profits of the dairy, in butter, cheese, and milk, are allowed to be very inconsiderable, and cannot, on an average, be estimated at more than about two guineas per cow annually, when the calves are reared. But, including the value of the calves themselves, when sold at the age of one year, the net profit of each cow may be stated at from 8*l*. to 10*l*.

54. MILKING.

The operation of milking, as well as many other operations in the dairy, require the most minute and unremitting attention. Hence, a small dairy is usually more profitably managed than a large one; for the farmer's wife and daughters can more readily superintend, or perhaps perform a great part of the dairy operations themselves, when the farm is of a moderate size, and this is always better done by them, than we can ever expect it to be by hired servants. Sir John Sinclair justly remarks, that no branch of husbandry requires such constant and unremitting attention. 'If,' says he, a few spoonfuls of milk are left in the udder of the cow at milking; if any one of the implements used in the dairy be allowed to be tainted by neglect; if the dairy-house be kept dirty or out of order; if the milk is either too hot or too cold at coagulating; if too much or too little rennet is put into the milk; if the whey is not speedily taken off; if too much or two little salt is applied; if the butter is too slowly or too hastily churned, or if other minute attentions are neglected, the milk will be in a great measure lost. If these nice operations,' continues Sir John, 'occurred only once a month, or once a week, they might be easily guarded against; but as they require to be observed during every stage of the process, and almost every hour of the day, the most vigilant attention must be kept up throughout the whole season. This is not to be expected from hired servants.'

55. PREPARING RENNET.

Take a calf's bag, maw, or stomach; and having taken out the curd contained therein, wash it clean, and salt it thoroughly, inside and out, leaving a white coat of salt over every part of it. Put it into an earthen jar, or other vessel, and let it stand three or four days; in which time it will have formed the salt, and its own natural juice, into a pickle. Take it out of the jar, and hang it up for two or three days, to let the pickle drain from it; resalt it; place it again in a jar; cover it tight down with a paper, pierced with a large pin; and in this state let it remain till it be wanted for use. In this state it ought to be kept twelve months: it may, however, in case of necessity, be used a few days after it has received the second salting; but it will not be so strong as if kept a longer time. To prepare the rennet for use, take a handful of the leaves of sweet briar, the same quantity of the leaves of the dog-rose, and the like quantity of bramble leaves; boil them in a gallon of water, with three or four handfuls of salt, about a quarter of an hour; strain off the liquor, and, having let it stand until perfectly cool, put it into an earthen vessel, and add to it the maw prepared as above. To this is added a sound good lemon, stuck round with about a quarter of an ounce of cloves, which give the rennet an agreeable flavour.

The longer the bag remains in the liquor, the stronger of course will be the rennet. The quantity, therefore, requisite to turn a given quantity of milk, can only be ascertained by daily use and observation.

A sort of average may be something less than a wine half pint of good rennet to fifty gallons of milk. In Gloucestershire, they employ one third of a pint to coagulate the above quantity.

56. HEATING MILK.

If milk be much heated when it is put to coagulate, and if the curd be broken, and the whey suddenly and strongly pressed out, as is often the case in Scotland, the cheese is worth almost nothing, but the whey is excellent, and will afford much butter. But when the whey is separated by a slow and gentle pressure, the cheese is good, but the whey limpid and poor.

This process is imperfectly understood. Mr. Marshall says, that it appears that from one to two hours is the proper time of coagulation; and that the milk ought to be covered, so as to lose, in the process, about five degrees of its original heat. Still, however, he confesses, that his observations and experiments have not been extensive enough to furnish a sufficient illustration of this very difficult subject. 'Climate, season, weather, and pasture,' he says, 'may require that these bounds should sometimes be broken.'

57. MAKING CHEESE.

Of the different modes of manufacturing the principal sorts of cheese and of their comparative merits, we have now to give some account. But, first, it is to be observed, in general, that cheese varies in quality, according as it has been made of milk of one meal, of two meals, or of skimmed milks: and that the season of the year, the method of milking, the preparation of the rennet, the mode of coagulation, the breaking and gathering of the curd, the management of the cheese in the press, the method of salting, and the management of the cheese-room, are all objects of the highest importance to the cheese-manufacturer; and yet, notwithstanding this, the practice in most of these respects is still regulated by little else than mere chance and custom, without the direction of enlightened observation, or the aid of well-conducted experiment.

58. Gloucester Cheese.

In Gloucestershire, where the manufacture of cheese is perhaps as well understood as in any part of the world, they make their best cheeses of a single meal of milk; and, when this is done in the best manner the entire meal of milk is used, without any addition from a former meal. But it not unfrequently happens that a portion of the milk is reserved, and set by to be skimmed for butter; and at the next milking this proportion is added to the new milk, from which an equal quantity has been taken for a similar purpose. One meal cheeses are principally made here, and go by the name of *best making*, or simply *one meal* cheeses. In this country, cheeses are distinguished into *thin* and *thick*, or *single* and *double*. The last having usually four to the hundred weight, the other about twice that number.

Gloucester cheese is of a pleasant, mild taste, and very agreeable to almost every palate. Mr. Hazard says, that the best double Gloucester is always made from new milk, or (as it is termed by the people of this and the neighbouring counties) 'covered milk;' but that an inferior sort is made from what they call 'half-covered milk;' and when any of these latter happen to be particularly good, they are sold, by such as are not very scrupulous in their dealings, for the 'best covered milk cheese; but honest farmers,' continues he, 'stamp them with a heart-shaped stamp, by which they are distinguished.' The true single Gloucester cheese is thought by many to be the best in point of flavour of any we have. The season for making their thin or single cheese is mostly from April to November; but the principal season for the thick or double is confined to May, June, and the early part of July. This is the busy season in the dairy; for at an earlier period the milk is not rich enough; and if the cheeses be made later in the summer, they do not acquire sufficient firmness to be marketable next spring. Very good cheese, however, can be made even in winter, from cows that are well-fed. In this country, as well as in Wiltshire and some others, they milk their cows in summer at a very early hour: generally by four o'clock in the morning, before the day becomes warm, and the animals restless and unruly.

59. CHESTER CHEESE.

In Cheshire, where they make cheeses of the largest size (60 or 100 pounds), they milk their cows in summer at six o'clock morning and evening; but in winter, at day-light in the morning, and just before dark in the evening. After the milk has been strained to free it from any impurities it may have caught during the milking, it is conveyed into a cooler placed upon feet like a table. This is a leaden cistern, nine inches deep, five feet long, and two and a half wide, with a cock or spigot at the bottom for drawing off the milk. This, when sufficiently cooled, is drawn off into pans, and the cooler again filled. In some cases the cooler is large enough to hold a whole meal's milk at once. The rapid cooling thus produced (which, however, is necessary only in hot weather and during the summer season,) is found to be of essential utility in retarding the process of fermentation, and thereby preventing ascenscy from commencing in the milk before two meals of it can be put together. Some have thought that the cheese might be improved by cooling the evening's milk still more rapidly; and that this might be effected by repeatedly drawing it off from, and returning it into the cistern. When the milk is too cold, a portion of it is warmed over the fire and mixed with the rest.

The colouring matter (annotto) in Cheshire, is added by tying up as much of the substance as is thought sufficient in a linen rag, and putting it into a half pint of warm water to stand over night. The whole of this infusion is, in the morning, mixed with the milk in the cheese tub, and the rag dipped in the milk and rubbed on the palm of the hand as long as any of the colouring matter can be made to come away.

The next operation is salting; and this is done, either by laying the cheese immediately after it comes out of the press on a clean fine cloth in the vat, immersed in brine, to remain for several days, turning it once every day at least; or by covering the upper surface of the cheese with salt every time it is turned, and repeating the application for three days successively, taking care to change the cloth twice during the time. In each of these methods, the cheese, after being so treated, is taken out of the vat, placed upon the salting bench, and the whole surface of it carefully rubbed with salt daily for eight or ten days. If it be large, a wooden hoop or a fillet of cloth is employed to prevent renting. The cheese is then washed in warm water or whey, dried with a cloth, and laid on what is called the drying bench. It remains there for about a week, and is thence removed to the keeping house. In Cheshire, it is found that the greatest quantity of salt used for a cheese of sixty pounds is about three pounds; but the proportion of this retained in the cheese has not been determined.

When after salting and drying, the cheeses are deposited in the cheese-room or store house, they are smeared all over with fresh butter, and placed on shelves fitted to the purpose, or on the floor. During the first ten or fifteen days, smart rubbing is daily employed, and the smearing with butter repeated. As long, however, as they are kept, they should be every day turned; and the usual practice is to rub them three times a week in summer and twice in winter.

The cheese-rooms in Cheshire are generally placed over the cow-houses. This is done to afford them, from the heat of the cattle below, that uniform and moderate degree of temperature which is supposed to be essential to the proper ripening of the cheese. Dry coarse grass or rushes are placed as litter on the floor.

60. Stilton Cheese.

Stilton cheese is made by putting the night's cream into the morning's new milk along with the rennet. When the curd is come, it is not broken as in making other cheese, but taken out whole and put into a sieve to drain gradually. Whilst this is going on, it is gently pressed; and having become firm and dry, is put into a vat, and kept on a dry board. These cheeses are exceedingly rich and valuable. They are called the Parmesan of England, and weigh from six to twelve pounds. Their most usual name is *cream cheeses.* The manufacture of them is confined almost exclusively to Leicestershire, though not entirely so.

61. Dunlop Cheese.

In Scotland, a species of cheese is produced, which has long been known and celebrated under the name of Dunlop cheese. The appellation is derived from a parish of the same name in Ayrshire, where this cheese was first made; but its manufacture is at present by no means confined to Dunlop.

The best cheese is made by such as have a dozen or more cows, and consequently can make a cheese every day; one half of the milk being immediately from the cow and the other of twelve hours standing. Their method of making it is simple. They endeavour to have the milk as near as may be to the heat of new milk when they apply the rennet, and when ever coagulation has taken place, which is generally in ten or twelve minutes,) they stir the curd gently, and the whey beginning to separate, is taken off as it gathers till the curd be pretty solid. When this happens, they put it into a drainer with holes, and apply a weight. As soon as this has had its proper effect, the curd is put back again into the cheese tub, and by means of a sort of knife with three or four blades, cut into very small pieces, salted, and carefully mixed by the hand. It is now placed in the vat, *chessel*, or *cheesitt*, as it is named in Scotland, and put under the press. This is commonly a large stone of a cubical shape, from half a ton to a ton in weight, fixed in a frame of wood, and raised and lowered by an iron screw. The cheese is frequently taken out, and the cloth changed; and as soon as it has been ascertained that no more whey remains, it is removed from the chessel altogether, and placed on a dry board or deal floor. It is turned and rubbed frequently with a hard coarse cloth, to prevent moulding, or breeding mites. No colouring matter is used in making Dunlop cheese, except by such as wish to imitate the English cheese.

62. GREEN CHEESE.

Green cheese is made by steeping over night in a proper quantity of milk, two parts of sage with one of marigold leaves, and a little parsley after being bruised, and then mixing the curd of the milk thus *greened* as it is called, with the curd of the white milk. These may be mixed irregularly or fancifully, according to the pleasure of the operator. The management in other respects is the same as for common cheese. These are mostly made in Wiltshire.

63. Making Butter.

Another important branch of the dairy system is the making of butter; an art which appears to have been the invention, not of the Greeks or Romans, but of the ancient Germans and Britons.

With regard to the good or bad qualities of butter, a great deal has been always ascribed to the pasturage of different farms or districts. Recent observations and experiments, however, shew that much less depends upon this than has been commonly imagined. Still, however, we are disposed to believe that certain pastures are more favourable to the production of good butter than others. Certain plants, such as turnip, wild garlic, hemlock, rough-leaved dandelion, charlock, and may-weed, are known to affect milk with a disagreeable flavour, and there may be many others which, to a certain degree, impair its goodness, though their effects are by no means so evident. Far more, however, depends on good managements than on this circumstance, or even on the species of cow we feed: for that something, likewise, is owing to this, is equally well ascertained. Cows have been found whose milk could not be brought to yield any butter at all.

It has been long remarked, that the butter in the Highlands of Scotland, when properly made, possesses a peculiarly rich and delicate flavour; and this has been almost universally attributed to the old grass on which the cows feed in these remote glens. But what more common error than to mistake a concomitant circumstance for a cause? Dr. Anderson, by his experiments on milk, has shewn that the excellence of the Highland butter may be very reasonable ascribed to a quite different cause. He has proved that the cream of a given measure of milk constantly increases in quantity, and still more in quality, from the first drawn tea-cupful, to the last drop that can be squeezed from the udder at the time.

From 12 to 20 hours in summer, and about twice as long in winter, should be permitted to elapse before the milk is skimmed, after it has been put into the milk-pans. If, on applying the tip of the finger to the surface, nothing adheres to it, the cream may be properly taken off; and during the hot summer months, this should be always done in the morning, before the dairy becomes warm. The cream should then be deposited in a deep pan, placed in the coolest part of the dairy; or in a cool cellar, where free air is admitted. In hot weather, churning should be performed, if possible, every other day; but if this is not convenient, the cream should be daily shifted into a clean pan; and the churning should never be less frequent than twice a week. This work should be performed in the coolest time of the day, and in the coolest part of the house, where there is a free draught of air. Cold water should be applied to the churn, first by filling it with this, some time before the cream is poured in, and then by immersing it in water to the depth of a foot or so, during the operation, provided we use the pump-churn; or by applying wet cloths to it, if we use a barrel-churn. Such means are generally necessary to prevent the too rapid acidification of the cream, and formation of the butter.

The winter season and cold weather, of course, require an opposite practice; but we can hardly be too cautious in the application of heat; for the common practices of wrapping the churn in a warm cloth, plunging it into hot water, adding warm milk to the cream, or placing the churn near the fire, all tend to injure the butter. The best way, perhaps, is to heat the churn, by filling it with boiling water before the cream is put in, and to place it in the warmest part of the house; but not close by a fire.

The operation of churning ought to be moderate, equable, and uninterrupted; for if we stop or relax in our exertions, the butter will *go back*, as it is called; and if the motion be too quick and violent, the butter will imbibe a very disagreeable flavour. This, in some districts of Scotland, is known by the phrase *bursting* the churn.

The process for making butter have been various in different ages, and among different nations. The operation of churning is well known; and we have only to observe, that though churns have been constructed of different forms, they may all be reduced to two, the vertical and horizontal. The vertical or pump churn, as it is usually named, was probably the first thought of, and is nothing more than a tall wooden vessel, three or four feet high, narrow in proportion to its height, and straiter above than below, having a sort of piston or staff adapted to it, with a perforated head, by moving which up and down with the hands, the cream is agitated, and the butter at length formed. The utensil is sufficiently well adapted to the operation of making butter on a small scale, where the cream to be churned is the produce of a few cows only. But where dairying is managed on the great scale, and the quantity of cream large, the operation performed in this way is too tedious and laborious for general use, and methods have been contrived to expedite the process and abridge the labour. This is best done by means of the horizontal, commonly called the barrel-churn, which is a cylindrical vessel, close at both ends, and firmly fixed upon a stand, having a sort of rack or trundle adapted to it within, usually with four blades, and turned by a winch or handle, placed on its axle, passing through the ends of the churn. By this machine, as much cream may be churned in an hour as could be done in ten or twelve by the common upright churn.

64. WASHING BUTTER.

When the operation is properly conducted, the butter, after some time suddenly forms, and is to be carefully collected and separated from the buttermilk. But in doing this, it is not sufficient merely to pour off this milk, or withdraw the butter from it; because a certain portion of the caseous and serous parts of the milk still remain in the interstices of the butter, and must be detached from it by washing, if we would obtain it pure. In washing butter, some think it sufficient to press the mass gently betwixt the hands; others press it strongly and frequently, repeating the washings till the water come off quite clear. The first method is preferable when the butter is made daily for immediate use, from new milk or cream: because the portions of such adhering to it, or mixed with it, contribute to produce the sweet agreeable flavour which distinguishes new cream. But when our object is to prepare butter for keeping, we cannot repeat the washings too often, since the presence of a small quantity of milk in it will, in less than twelve hours after churning, cause it sensibly to lose its good qualities.

The process of washing butter is usually nothing more than throwing it into an earthen vessel of clear cool water, working it to and fro with the hands, and changing the water till it come off clear. A much preferable method, however, and that which we believe is now always practised by those who best understand the business, is to use two broad pieces of wood instead of the hands. This is to be preferred, not only on account of its apparently greater cleanliness, but also because it is of decided advantage to the quality of the butter. To this the warmth of the hand gives always more or less of a greasy appearance; and butter washed by means of the wooden *flappers*, as they are called, will always fetch at market a higher price, than if the hand had been employed. The influence of the heat of the hand is greater than might at first have been suspected. It has always been remarked, that a person who has naturally a warm hand never makes good butter.

65. Preserving Butter.

After washing, the butter should be cut and sliced in every possible direction, with a serrated or rough-edged knife, in order to bring out from it the smallest hair, bit of rag, strainer, or any thing that may have chanced to fall into it. It is then to be spread in a bowl, and such a quantity of salt added as may be judged proper. If the butter is to be used immediately, or kept only for a short time, a small proportion will be sufficient; and in this state it is usually denominated *fresh* butter. But if it be intended to be long kept, or transported to a distance, an ounce or two of salt will be required to the pound of butter. The salt used in curing butter should be of the purest kind, well dried, and broken down, but not completely pulverised; and it must be so thoroughly worked in, as to be equally incorporated with the mass.

When butter is to be sold on the spot, or in the neighbouring markets, it is divided into rolls of a pound or half a pound; or into lumps of 24 ounces, called dishes in some parts of England; but when it is to be kept or carried to a distance, quantities of 84, 56, or 28 pounds, are put up together in casks, usually called tubs, firkins, and half firkins.

When the butter has been sufficiently impregnated with the salt, by being spread out in thin layers, sprinkled with it, and thoroughly wrought, it is then to be gently pressed into the tub or firkin, which must not, however be filled quite up, but room left at top to receive a layer of salt, half an inch or an inch in thickness. In seven or eight days, the salted butter detaches itself from the sides of the firkin, shrinks, and occasions interstices.—These, if allowed to remain, would injure the butter, by admitting the contact of the air. They are, therefore, to be filled up by a saturated solution of salt in water, or brine strong enough to carry an egg. The butter is then to be covered by a new layer of salt, and the head of the vessel put on.

Before the butter is put into the firkin, care must be taken that the latter be well seasoned; and this is effected by exposing it for two or three weeks to the air, and frequent washing. The readiest method, however, is by the use of unslaked lime, or a large quantity of salt and water well boiled, with which it should be scrubbed several times, and afterterwards thrown into cold water, to remain three or four days till wanted. It should then be scrubbed as before, and well rinsed with cold water; and before receiving the butter, every part of the inside of the firkin must be carefully rubbed with salt. Indeed, the surest of all methods to preserve butter from spoiling, after it has been properly salted, is to keep it constantly immersed in a saturated solution of this substance.

66. DESTROYING THE TURNIP TASTE.

As turnips is now become so common a food for cows, and often imparts to their milk, and the butter thence made, a very disagreeable flavour, it is of some consequence to know how this may be best obviated. A small quantity af saltpetre has been recommended; and in the Georgical Essays, vol. v. we have the following method: 'Let the bowls or pans be kept constantly clean, and well scalded with boiling water before using. When the milk is brought into the dairy, to every eight quarts mix one quart of boiling water; then put up the milk into the bowls to stand for cream.' Dr. Anderson says, 'that if the milk is to be used sweet, its taste may be considerably diminished by boiling; and that other means of sweetening milk have been attempted more troublesome and expensive, and not more efficacious.'

67. COLOURING BUTTER.

As butter made in winter is generally pale or white, and its richness at the same time inferior to that which is made during the summer months, the idea of excellence has been associated with the yellow colour. Means are therefore employed by those who prepare and sell butter, to impart to it the yellow colour where that is naturally wanting. The substances most commonly employed are, the root of the carrot, and the flowers of the marigold. The juice of either of these is expressed, and passed through a linen cloth. A small quantity of it, (and the proportion necessary is soon learned from experience,) is diluted with a little cream, and this mixture is added to the rest of the cream when it enters the churn. So little of this colouring matter unites with the butter, that it never communicates to it any peculiar taste.

68. LAWS RESPECTING BUTTER.

An act of parliament (36th Geo. III. c. 86.) particularly regulates the packing, salting, and selling of butter. By that statute it is enacted, that every vessel made for the packing of butter, shall be of good well-seasoned wood marked with the maker's name, and, by a subsequent act, his place of abode; that it shall be a tub containing 84, a firkin containing 56, or a half firkin containing 28 pounds avoirdupois, and no other; that it shall be of a particular weight, and neither top nor bottom exceeding a certain thickness, having the true weight or tare of the vessel distinctly marked upon it; with a variety of other regulations to prevent frauds, under severe penalties. Any fraud with regard to the butter, the vessel, or its marks, subjects the person concerned to a forfeiture of 30*l.* for every such offence.

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DISORDERS OF SHEEP.

OWING to the very extensive ranges which sheep are permitted to have on large farms, it is difficult to discover a sickly animal before its disorder has made so much progress as to render every attempt to remove it quite unavailing. On that account it becomes of very great importance to feed and manage sheep in such a manner, as to expose them in the least possible degree to any thing which might injure their health. But before we can prevent diseases, we must understand their nature. We have not yet arrived at a sufficient degree of knowledge for enabling us to distinguish the diseases of sheep with accuracy, or to trace them to their origin. Much, however has been done lately to communicate knowledge to shepherds; and vulgar prejudices are losing ground on this subject, as well as on other branches of medicine and surgery.

1. The Staggers.

Symptoms.—This affection is called not only the *Staggers*, but also the *Hydrocephalus*, *Sturdy*, *Goggles*, *Turnsick*, &c. This disease is particularly incident to young sheep, or hogs of a year or eighteen months old. It consists in a collection of water, generally formed upon the external surface of the brain immediately below the skull, and sometimes, though not often, in the centre or ventricles of the brain. The disorder is first discovered by the animal not keeping up with the rest of the flock, and by its appearing dull and stupid. It is afterward observed to go round in a giddy manner, and at length appears blind. It may remain a long time in this situation before it dies; and it is said that sheep have sometimes recovered without any thing being done to them. They are often in good order when they die, as they continue to feed well, until near the last period.

Cause.—The ventricles of the brain are kept constantly moistened with a fluid, which, when collected in too great quantities, forms one species of this disease, and one which is generally deemed incurable. The other, and most common species of the disease, arises from animalculæ, called hytatids. In this case the water is contained in cysts, or bags, unconnected with the brain, on which, however, if not prevented, it acts fatally by pressure. It would appear too, that a long continuation of the pressure occasions part of the brain to be completely disorganized.

Cure.—Various methods of relieving the pressure on the brain have been proposed, and when put in practice by skilful and patient hands, most of them have succeeded. It would be superfluous to enumerate and describe them all, as a method has been found of perforating the cyst, which has succeeded perfectly in numberless instances; and which, from the ease with which it may be performed, very strongly recommends itself. Yet the operation is one which from reasoning on the peculiar delicacy of the brain, never would have been advised. We are indebted for it, it would appear, to Mr. James Hogg, who tried the experiment to rid himself of trouble, while a herd boy. He laid hold of every sturdied sheep that came in his way, and (being employed in knitting stockings) he thrust one of his wires up the animal's nose, and forced it through the skull into the brain. In those cases in which wiring proves fatal, it is probable that the instrument does not reach the cyst. There may, indeed, be some portions of the brain more delicate than others; and, on the whole, however general the success of this operation may be, it must be considered as hazardous. Desperate diseases, however, require desperate remedies.

The more delicate and nice operations of trepan, and extraction of the cyst, are fit only to be in the hands of skilful surgeons. But with ordinary servants, the bungling of either, which would be fatal, would occur so frequently, that only the simple operation of wiring should be attempted.

2. RED WATER.

Symptoms.—Red water commonly makes its appearance about the beginning or end of winter, and first affects about the breast and belly. It consists of an inflammation of the skin, that raises it into blisters, which contain a thin, reddish, and watery fluid. These continue for a short time, break, discharge this matter, and are followed by a blackish scab. Red water is a disease that but seldom appears in this country, and it is almost never fatal.

Causes.—When the sheep are exposed to cold or wetness, the skin being fretted makes the blisters rise; or they often arise from cold affecting the animal internally, thus producing a slight fever, which throws out these vesicles on the body, similar to the scabby eruptions which appear about the face, and more particularly the mouth of those persons affected with cold. The blood in this disease is but little affected, although a little of it oozes into the vesicles on the skin, and communicates to them that reddish tinge which gives origin to the name.

Cure.—In cases where the disease is violent, a little blood should be taken. The sheep should be placed in a fold by itself, the blisters slit up, and a little infusion of Tobacco put into them; and the following medicine may be given for three or four mornings successively.

Flower of sulphur, - -	2 ounces.
Honey, treacle, or syrup, -	3 ounces.

Mix them, and divide them into six doses, of which one may be given every morning in half a pint of warm water. If this is found unsuccessful, half an ounce of nitre, mixed with the foregoing receipt, will be attended with good effects, after which a dose of salts may be given, and the body washed with lime water.

Another kind of *Red Water* has been described, said to be caused by 'feeding on turnips and succulent grasses. It attacks sheep that are in good condition, and often destroys them in twenty-four hours.' This, however is a different disease, and consists in an inflammatory state of the system, affecting particularly the internal parts. Here bleeding is essentially necessary, after which the bowels should be emptied by giving from one ounce to one ounce and a half of Epsom salt. When the animal recovers, he should not be too hastily turned into the pasture with the other sheep.

3. ERYSIPELAS, OR WILD FIRE.

Symptoms.—This, like the last mentioned disease, also affects the skin, and is apt, if not attended to, to spread very quickly among the flock. It is attended with more inflammation than the last: and but seldom with blisters over the body. It commonly appears in August and September, and does not continue above eight days at a time, although those sheep affected with it are liable to relapse. In former times, it was a practice with shepherds to bury those sheep affected with this disease at the door of the fold, with their feet upwards, which they believed acted as a charm to drive it from the flock.

Cure.—'It is necessary,' says Mr. Stephenson, 'for the cure of this disease, to follow the same method recommended in the red water. An ounce of salts, dissolved in warm water, given every morning, for three or four days, answers remarkably well to begin the cure, when the last mentioned receipt, with the addition of the nitre, may be continued, till the disease disappears.' But Sir G. Mackenzie thinks, that giving salts in warm water is liable to objection. The effects of the medicine, he says, will be more powerful, and more beneficial, when the solution is administered cold. For washing the body, goulard water is the best application.

4. SCAB, OR ITCH.

Symptoms.—This infectious, troublesome, and destructive disease, is well known. A sheep is never, even slightly, affected, but it proceeds to scratch itself, and to rub its sides and buttocks against every thing it meets. As soon as the disease is discovered, the whole flock, among which the scabbed animal has been pasturing, should be carefully examined, and every one which has an appearance of being fretted on the skin should be taken away to be cured.

Causes.—This is a very infectious disease. It seldom appears among sheep which have been smeared; and when it does, it proceeds, most probably, from the touch of a diseased animal, of a stone, or a tree, or paling, on which scabbed sheep have rubbed themselves.

Cure.—Several ointments have been proposed for the cure of this disease, and that of Sir Joseph Banks seems to have been most approved of. His prescription, however, can only be made by an apothecary, a personage not always at hand, and who may not always have sheep ointment ready when wanted. Every apothecary has abundance of mercurial ointment at all times; and if a shepherd purchases a quantity of it to keep by him, with a little oil of turpentine, he may always have it in his power to make up ointment when he requires it, and of such a degree of strength as he may judge proper.

The following directions may be found useful; Take,

Strong mercurial ointment,	4 pounds.
Oil of turpentine, - -	half a pint.
Hog's lard, tallow, or butter,	4 pounds.

Melt the hog's lard, or butter. Allow them to settle, and pour off the clear liquid: then add the mercurial ointment, stirring the whole well, till it be melted and incorporated, and then add the oil of turpentine. Keep stirring the mixture for a minute or two, that the mercury may be completely mixed, and then pour the whole into some shallow vessels, that the ointment may cool quickly. If the mercury should appear to have sunk when the ointment is cold, it may be rubbed a little with a smooth flat stick on a plate. But there will seldom be any occasion for this, if the process be well managed. A very effectual and a much cheaper ointment may be made as follows:

Corrosive sublimate, - -	8 ounces.
Train oil, - - -	6 gallons.
Rosin (black or yellow), -	2 pounds.
Tallow, - - - -	2 pounds.

Let the corrosive sublimate be reduced to a fine powder, and mixed with a portion of the oil. The rosin, tallow, and remainder of the oil, are to be melted together over the fire, and the sublimate afterwards added.

If this mixture should be thought too thin, the proportion of oil may be diminished, and that of the tallow increased. Were one or two pounds of powdered white hellebore to be added, it would improve both the consistence and efficacy of the ointment. One pound of sublimate, at 10*s*. will, in this way, go as far as 50 pounds of mercurial ointment, at 3*s*.

If the wool be not taken off, either of these ointments, or that of Sir Joseph Banks, is to be laid on, in the same manner as smearing stuff, beginning with a line along the back; one is to be laid on each side, and one down each leg. The neck, inside of the thighs, and belly should have a share. In every case, however, the wool should be shorn, except during very cold weather, and the animal washed and brushed with soap and water, before the application of the ointment, which may now be applied all over the body. The mercury will have more effect, and less of the ointment will serve, when all filth and loose scabs have been removed by the washing. Anointing the sheep after being shorn, will be found a very effectual means of warding off the scab, and every disease of the skin.

As there is some danger in using powerful mercurial ointments unless very cautiously applied, the following method may be tried, and will be found successful in all recent cases.

In the first place, let the sheep be well washed with soft soap and water, and, by means of a brush, let the scurf, or scabs, be rubbed off from the affected parts of the skin. When the sheep is perfectly dry, the following ointment is to be applied, taking care that it is well rubbed upon the diseased parts:

Hog's lard, - - -	1 pound.
Oil of turpentine, - -	4 ounces.
Flowers of sulphur, - -	6 ounces.

Melt the lard over a slow fire, and when fluid, but not very hot, add the turpentine and sulphur, and continue stirring the mixture until it is cold.

The success of this remedy depends, in a great measure, upon the above directions being strictly attended to.

5. Foot Rot.

M. Pictet, a French writer, has given a very detailed account of this disease, as also the memoir of a Piedmontese professional man on the same subject. An English writer says, that this troublesome disease in the feet of sheep is caused generally by keeping them in the wet marshy ground, or by travelling when the horny part of the hoof has been too much softened by standing in soft ground. It is supposed to be contagious. When a sheep is observed to be lame, and, upon examination, the foot is found to be affected with this disease, give vent to any matter that may be confined, by paring away the horn; or if the horn is found to cover a diseased part, it should be removed with a knife, that the proper remedies may be applied to it. Caustics are found to be the only effectual remedies for the foot rot. We have given three receipts, or formulæ: the first, or milder preparation, will answer the purpose in slight incipient cases; but in those of long standing, the stronger caustic will be found necessary.

No. 1.

MILD.

Sulphat of copper,	2 ounces.
To be dissolved in twelve ounces of water.	
To which add of strong sulphuric acid,	2 drachms.

No. 2.

STRONGER.

Powdered verdigris,	1 ounce.
Nitrous acid,	2 ounces.
Water,	4 ounces.

No. 3.

STRONGEST.

Red nitrated quicksilver,	1 ounce.
Nitrous acid,	2 ounces.
Spirit of wine,	3 ounces.

Dissolve the nitrated quicksilver in the acid; and, when perfectly dissolved, add gradually the spirit of wine.

It may be necessary to dilute this sometimes with a little water: and it should be remarked, that, after applying either of these preparations once or twice, the sore part will generally have a more healthy appearance, and then some mild application will be most proper, such as Friar's balsam or tincture of myrrh. It is likely that a mixture of tar and oil of turpentine would prove a useful application in such cases, as it may tend, in some measure, to protect the diseased part from moisture. For some time after the feet have been dressed, the sheep should be kept in a dry place; turning them into a limed fallow has been strongly recommended.

The following judicious treatment of this disorder is recommended by Sir George Mackenzie:—Let the animal, in the first place, get a dose of Glauber salts. The ulcer having been laid open and cleaned, it is to be washed with weak caustic ley of potash, or soda, and filled with scraped linen, dipped in oil, or, what is better, goulard cerate. The dressing of cerate is to be continued, every evening, until granulations of flesh appear to be filling up the space formerly occupied by the matter of the ulcer; and if it should be necessary, the washing with caustic ley may be repeated. Common cerate may then be applied, and should the flesh grow too luxuriantly, a little red precipitate and burnt alum may be dusted upon it. When a wholesome suppurative discharge has taken place, gentle pressure may be applied to bring the sides of the sore towards each other, taking care always to give free vent to the matter. The limb should be carefully washed with vinegar and water.

6. The Rot.

Symptoms.—Dr. Coventry says that *Rot* is a word which has been employed to express a variety of disorders affecting the sheep, with no small confusion and detriment. Yet all the species of rot may be reduced to one. But when the disease has advanced, it beomes very complicated, and has been deemed incurable. The complication of disorders, which are always observed in the advanced stages of the rot, might be expected where bad food is supposed to be the cause of it; for this must vitiate the blood, and different organs may then become diseased. Accordingly we find the liver, the lungs, and the whole system affected, and water is frequently found in the belly. It is very probable that consumption of the lungs is a common disease among sheep; and that it has, in many instances, been mistaken for rot. Mr. Stevenson, indeed, has considered the lungs to be its chief seat. Cold is the most frequent cause of consumption, although inflammation may be excited by other means.

Sheep are sometimes born with little tumours, called tubercles, on their lungs; and these appear to be the original seat of the disease in them, as in the human subject. These tubercles being inflamed by cold or other means, swell and become filled with matter. Sometimes they are coughed up in this state; but most frequently they degenerate into ulcers, which spread and consume the substance of the lungs. When the lungs are affected in any case of rot, it is a hopeless business to attempt a cure, especially if they are suspected to be ulcerated. But as it may often happen that such tubercles as have filled with matter may be coughed up, mere difficulty of breathing need not deter us from attempting a cure. But the liver must be considered as the principal seat of the disease; and as it is the organ which prepares the bile, which assists digestion, we ought by all means, to endeavour to restore it to a sound state. With respect to the fluke-worms formed in the livers of rotten sheep, their production cannot be fully explained; but it is sufficient that we know that they do exist in diseased livers, to be convinced of the propriety of destroying them if possible.

Causes.—This disease never attacks sheep on dry lands. It has been observed to affect sheep which were before healthy, almost immediately on their being sent to feed on soft wet pastures. Mr. James Hogg thinks that it proceeds from a sudden fall in condition. Others have assigned bad and unwholesome food as the cause of the rot. A sudden fall in condition may accompany the disease without having induced it. A sheep may continue to fill its belly, and yet fall off. It is the cause of the transition from fatness to leanness, and not the transition itself, that ought to be looked to. If that cause be hunger, rot will not be the consequence, but the usual effects of starvation will follow. It is well known that on healthy pastures, whether so rich as to keep sheep fat, or so poor as only to bring them into ordinary condition, the rot is not known. Soft rank grasses, whether abundant or scarce, invariably occasion the disease. Indeed, it is now so well understood that rank grasses act as a sort of poison on the stomach of sheep, that the rot is very easily avoided.

Cure.—The cure, in the first stages of the disease, does not present many difficulties. The first object is to free the stomach and intestines from their pernicious contents by means of a purgative, such as common or Glauber salts, and when that is accomplished, wholesome food will most probably complete the cure.

The medicine to which we may look with greatest confidence in the advanced stages of rot, appears to be mercury. It would perhaps be improper to administer this internally. The safest and most effectual method of applying it, is in the form of the common blue ointment, and a trial of this is strongly recommended to those whose flocks are liable to rot. It should be applied to the bare skin on the region of the liver, and the size of a nut rubbed on it till it is all dried up, twice a day, for a week or ten days. This, in conjunction with wholesome food, will, in all probability, prove to be the most effectual treatment. Mercury is well known to be a specific for the diseased liver of the human body, and on that account, we may presume that it will be efficacious in the cure of the same organ in sheep, and it is also recommended as the most effectual means of destroying the fluke-worm.

An able writer on this subject justly observes, that the *poke*, or swelling under the jaws, does not appear to be a symptom peculiar to the rot. Cattle are subject to similar swellings, and in them they are often so large as to prevent the animal from swallowing. It is not improbable that the poke may sometimes have the same effect on sheep. Mercury will probably remove it. Consumption of the lungs, and the effects of hunger, seem to be confounded with the disease properly called rot, and we must wait till future observations enable us to distinguish the symptoms, before a more particular account of these different disorders can be given.

7. The Braxy, or Sickness.

Symptoms.—This is a disease, the symptoms of which can seldom be observed till all hopes of cure must be given up. Sheep have been seen eating heartily as if in perfect health, and suddenly to start and fall down dead, and when opened immediately, the putridity of the whole carcase occasions a stench, often so intolerable as to force most people, however curious, to abstain from an examination of the body. The disease in all its varieties is inflammatory; and, from the great tendency of the inflammation to run into mortification, it may be termed a putrid disorder. The progress of the inflammation in general excites great pain; but when mortification begins, the pain ceases, and thus we may account for sheep appearing well and suddenly dying. When a sheep is observed to be restless, lying down and rising up frequently, and at intervals standing with its head down and its back raised; and when it appears to run with pain, inflammation of some of the viscera may be suspected, and the commencement of the braxy apprehended.

Causes.—The causes which inflame the intestines, and occasion this disorder, may be very various. Costiveness from eating hard dry food, drinking cold water when the body is overheated, or its being plunged into water while in that state, or suddenly drenched by rain, or chilled by a shower of snow, may all contribute to bring on this dangerous malady.

Cure.—As soon as the approach of this disease is perceived, bleeding ought immediately to be performed, and not sparingly; and an ounce of Epsom salts, dissolved in a quart of cold water, should be administered. On the second day, a clyster of broth, with a good deal of salt, should be thrown up to clear the lower intestines; and as much nitre as will lie on a shilling, should be dissolved in an English pint of cold water, and given in three doses, one in the morning, another at noon, and the third in the evening. This should be continued till the animal appears to recover, and, if necessary, the bleeding should be repeated. Whatever food is given, whether cut grass, or turnips, or other succulent food, should be sprinkled with salt. Braxy seldom attacks sheep which are allowed a proper proportion of fresh succulent food during the winter.

8. Diarrhœa, or Scouring.

This is a common disease in sheep, which occurs generally in the spring. It is supposed to arise from being put too hastily into a luxuriant pasture. It is sometimes of service to their general health, and ought never to be stopt too soon. But this complaint sometimes proceeds so far as to bring on great debility, if its violence be not checked. When the flux is moderate, change of diet, from soft to dry food, for a few days, may effect a cure. But if the purging be considerable, half an ounce of chalk may be given in an English pint of cow's milk, a little warmed. The dose may be repeated at the end of two days, if symptoms of amendment have not appeared. If the purging be very violent, and attended by straining, the first dose should be a dram of rhubarb, and after it has operated, chalk may be given. When cured, the animal must be gradually accustomed to its pasture, otherwise the tender rich grass may occasion a relapse.

9. DYSENTERY.

Symptoms.—This disease is sometimes called the *braxy*. A sheep affected with it has generally the wool clapped, the eye languid, the mouth dry, the skin rough, and pulse quick. It lies down frequently, and rises again at short intervals. It voids fæces very often, almost every time it gets up, and which are mixed with blood and slime. At a more advanced stage, they are black and stinking. It eats little, and does not chew the cud.

Dysentery is sometimes mistaken for diarrhœa; but they may be distinguished by the following characters;

1st. Diarrhœa attacks chiefly hogs and weak gimmers and dinmonts; whereas dysentery is frequent among older sheep.

2d. Diarrhœa almost always occurs in the spring and ceases about June, when dysentery only commences.

3d. In diarrhœa there is no fever, or tenesmus, or pain before the stools, as in dysentery.

4th. In diarrhœa the fæces are loose, but in other respects natural, without any blood or slime; whereas in dysentery the fæces consist of hard lumps passed occasionally; the rest being blood and slime.

5th. There is not that degree of fœtor in the fæces, in diarrhœa, which takes place in dysentery.

6th. In dysentery the appetite is totally gone; in diarrhœa it is rather sharper than usual.

7th. Diarrhœa is not contagious; dysentery highly so.

8th. In dysentery the animal wastes rapidly; but by diarrhœa, only a temporary stop is put to its thriving, after which it makes rapid advances to strength, vigour, and proportion.

9th. Dysentery is commonly fatal, diarrhœa rarely, unless the animal has been previously much debilitated.

Cure.—As dysentery is frequently attended by inflammation, bleeding will be proper, and also a purge. Afterwards the following doses should be daily administered, until symptoms of recovery appear, which will be very soon. The day after the bleeding and purging, half an ounce of chalk, mixed up in warm milk. Two hours afterwards, a gill of warm water into which has been put half a table spoonful of tincture of terra japonica and 30 drops of laudanum. The diet should consist of hay, sprinkled with salt.

10. JAUNDICE.

This is a rare disease. It is known by the skin and eyes becoming of a greenish yellow colour. It is occasioned by the rupture of some of the vessels secreting the bile, or conveying it to the stomach and intestines. The bile being diffused through the body, causes the colour peculiar to this disease. Bleeding is useful; and a dose of jalap, with perhaps a few grains of calomel, will be of service. Exercise is very efficacious.

11. MAGGOTS.

When, on the examination of a sheep or lamb which appears harrassed and restless, the tumours under which the maggots are concealed are observed, they should be freely opened, that the vermin may be picked out. The sore may be anointed and covered with a rag spread with smearing stuff. This dressing being daily changed, a recovery is made in a few days. Means of preventing the attacks of flies, which deposit the eggs from which the maggots issue, will be pointed out when the management of sheep is considered.

12. Sore Nipples.

Lambs very often die of hunger, from their dams refusing them suck. The cause of this is sore nipples, or some tumour in the udder, in which violent pain is excited by the striking of the lamb. Washing with sugar of lead and water, or spirits, will remove the complaint.

13. Wounds.

The manner of treating wounds has been already detailed; and the same method which is found useful in the case of one animal is equally so in another. The cure of all wounds is affected by adhesion, or by suppuration; and the adoption of either of these modes must always depend on circumstances.

14. Poisoned Wounds.

Not unfrequently sheep are bitten by snakes. As the wound inflicted by these reptiles is very small, the injury is never perceived till the poison has entered into the system. Sheep are often observed to become sickly and to swell. These symptoms are often attributed to braxy or rot, when in reality, an adder or viper has occasioned the mischief. When it is suspected that a sheep has been bitten by a snake, doses of oil should be given, or, if at hand, small but frequent doses of volatile salt mixed with water.

15. Fractures.

The mending of a broken bone, though somewhat tedious, is by no means difficult, when the skin covering the fracture has not been torn. Let the limb be stretched, and the broken ends of the bone placed very accurately in contact with each other. A piece of stiff leather, of pasteboard, or of thin wood, wrapt in a soft rag, is then to be laid along the limb, so that it may extend an inch or two beyond the contiguous joint. Whichever of these substances be employed, it should be carefully secured in its situation by a bandage of linen, or flannel, an inch and a half broad, and two yards long, or more if necessary. After having been firmly rolled up, it should be passed spirally round the leg, beginning at the foot, and carrying it up to above the end of the splint. The splint should be worn during ten days or a fortnight, and the bandage should be continued till the leg has acquired its former strength. When any considerable swelling appears, the bandage should be carefully slackened, and tightened again when the swelling abates. When a bone is broken in more than one place, all the pieces should be placed in their natural situation and secured, and healed in the same manner.

16. BLEEDING.

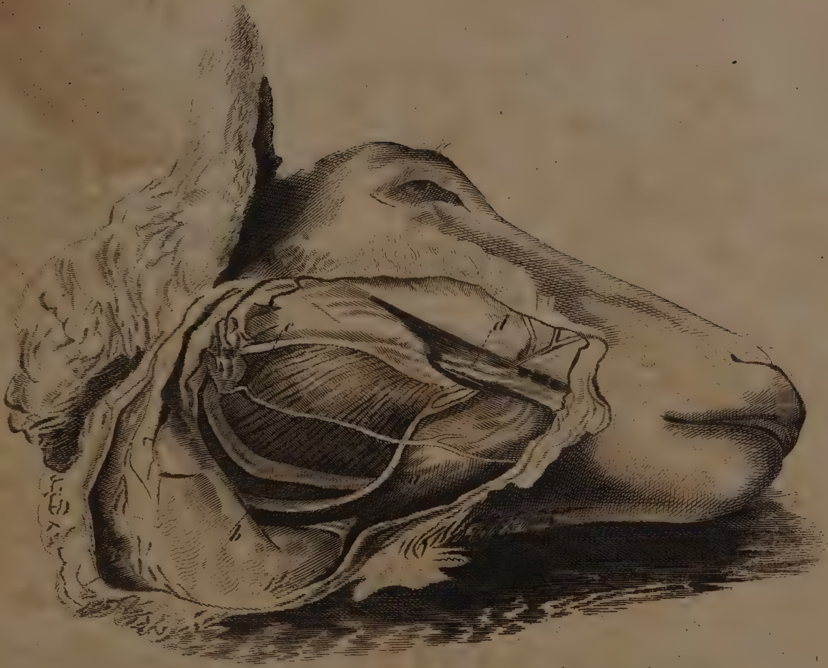
This operation is most conveniently performed on a large vein, whose branches are spread over the face of the sheep. The vein may be felt distinctly coming from the branches of the trunk, and passing over the edge of the lower jaw to the cheek, about two inches from the corner or angle of the jaw, or opposite to the third of the grinding teeth. When the operation is to be performed, the sheep is to be held between the limbs of the operator, and the croup placed against a wall to prevent the animal from recoiling; the left hand is to be placed under the head, and the under jaw grasped in such a manner, that the fingers come upon the right side of the jaw, so as to press upon the vein, a little below where it is intended to be opened. By thus pressing on the vein, the flow of blood is prevented beyond the place where the pressure is applied; and the blood, consequently, can find no other course but through the artificial opening about to be made. The operator, with the lancet or knife, opens the vein by making an incision *obliquely* across it at the place where the trunk is largest, and where it is most distinctly felt through the skin. The oblique direction of the cut is found to answer better than either one made directly along the course of the vein, or one across it. While introducing the instrument, it is of great consequence to keep the vein from rolling under the skin, and escaping from the point; this is best accomplished by making the incision close to the point of the finger which presses upon the vein.

The annexed figure shews the situation of the veins in the cheek most proper for bleeding. The vein, *a*, is seen coming from below the under-jaw at *b*, and spreading its branches on the soft part of the cheek. A small nerve, *c*, runs in an opposite direction, and crosses over the vein; and in the operation of bleeding, this nerve *should not be divided.* Below the nerve, a thick fleshy muscle is exposed, called the zigomaticus major, which has the principal share in moving the jaw during mastication, There is another muscle, *d*, much thinner than the former beneath which the branches of the vein of the cheek pass; it goes to the corner of the mouth, and assists in the motion of the lips. The vein should be opened, in the operation for bleeding, at the part where it is longest and nearest the surface, and where there is least risk of injuring any adjacent part. The place marked *a*, will be found in general to answer best.

BREEDING OF SHEEP.

17. Nature of Sheep.

The sheep, though in most countries under the protection and control of man, is not that stupid and contemptible animal that has been represented. Amidst those numerous flocks which range without control on extensive mountains, where they seldom depend upon the aid of the shepherd, it will be found to assume a very different character: in those situations, a ram or a wedder will boldly attack a single dog, and often come off victorious; but when the danger is more alarming, they have recourse to the collected strength of the whole flock. On such occasions they draw up into a compact body, placing the young and the females in the centre; while the males take the foremost ranks, keeping close by each other. Thus an armed front is presented to all quarters, and cannot easily be attacked without danger or destruction to the assailant. In this manner they wait with firmness the approach of the enemy; nor does their courage fail them in the moment of attack: for when the aggressor advances within a few yards of the line, the rams dart upon him with such impetuosity, as to lay him dead at their feet, unless he save himself by flight. Against the attacks of single dogs or foxes, when in this situation, they are perfectly secure. A ram, regardless of danger, will sometimes engage a bull; and, as his forehead is much harder than that of any other animal, he seldom fails to conquer: for the bull, by lowering his head, receives the stroke of the ram between his eyes, which usually brings him to the ground.



Dissection of the large Vein of the face showing the method of Bleeding.

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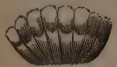

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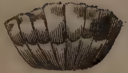

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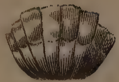

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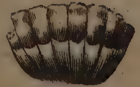

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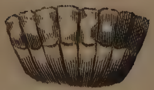

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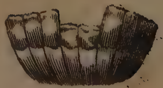


In the selection of their food, few animals discover greater sagacity than the sheep; nor does any domestic animal shew more dexterity and cunning in its attempts to elude the vigilance of the shepherd, in order to steal such delicacies as are agreeable to its palate.

Besides its hardiness in enduring great severities of weather, the natural instinct of the sheep, in foreseeing the approach of a storm, is no less remarkable; in their endeavours to secure themselves under the shelter of some hill, whole flocks have frequently been buried for many days under a covering of snow, and have afterwards been taken out without any material injury.

18. ON THE TEETH AND AGE.

Like other ruminating animals, the sheep wants the upper fore teeth; it has eight in the lower jaw; two of which drop out, and are replaced at two years old; four of them are renewed at three years, and the remainder at the age of four.

The figures in the preceding plate shew the changes which take place in the teeth of sheep during the first eight years; and by which their ages may be known.

Fig. 1st, represents the 8 teeth of the fore part of the under jaw, in a sheep one year old.

Fig. 2d, the teeth of a sheep 2 years old.
Fig. 3d, ...3 years old.
Fig. 4th,..............................4 years old.
Fig. 5th,..............................5 years old.

Fig. 6th, shows the front teeth worn and broken, as is generally the case in the 7th or 8th year.

19. THE RAM.

It may be observed, that the rams of different breeds of sheep vary greatly in their forms, wools, and fleeces, and other properties; but the following description, by that excellent stock-farmer, Mr. Culley, deserves the attention of the breeder and grazier. According to him, his head should be fine and small, his nostrils wide and expanded, his eyes prominent, and rather bold or daring, ears thin, his collar full from his breast and shoulders, but tapering gradually all the way to where the neck and head join, which should be very fine and graceful, being perfectly free from any coarse leather hanging down; the shoulders broad and full, which must at the same time join so easy to the collar forward, and chine backward, as to leave not the least hollow in either place; the mutton upon his arm or fore-thigh must come quite to the knee; his legs upright, with a clean fine bone, being equally clear from superfluous skin and coarse hairy wool from the knee and hough downwards; the breast broad and well forward, which will keep his fore-legs at a proper wideness; his girth or chest full and deep, and instead of a hollow between the shoulders, that part by some called the fore-flank should be quite full; the back and loins broad, flat, and strait, from which the ribs must rise with a fine circular arch; his belly straight, the quarters long and full, with the mutton quite down to the hough, which should neither stand in nor out; his twist, or junction of the inside of the thighs, deep, wide, and full, which, with the broad breast, will keep his fore-legs open and upright; the whole body covered with a thin pelt, and that with fine, bright, soft wool. It is observed, that the nearer any breed of sheep come up to the above description, the nearer they approach towards excellence of form.

But though this is a very correct, appropriate, and admirable description of a finely-formed ram, objections have been made by some to a few of the properties which are laid down. Width and expansion of the nostrils in sheep, it is supposed, are liable to cause the lower parts of the noses to be too thick and large; while in naturally good and improved forms, the lower parts of the noses and mouths are for the most part small. Nor is the prominent and bold daring eye held in more estimation, as it is thought not to shew a good disposition; but, on the contrary, to display too much quickness and activity, or wildness of nature in the animal. Opinions, however, differ much on this point among sheep-farmers; and a lively quick eye is almost always considered as favourable to a good disposition.

Rams naturally possess more boldness and courage than either wedders or ewes; and they are very apt, unless great care is taken, to acquire mischievous habits of attacking persons or animals that may by accident approach them.

In some sheep districts the breeders are greatly in favour of large rams, but in others those of a smaller size are preferred; the choice of the size of the rams should, however, in every instance, be regulated by the nature and abundance of the keep, or the quality of the lands, as it is utterly impossible that the inferior sorts of pastures can keep sheep-stock of the large size, as in those of the better kinds; and it would be highly disadvantageous in the best rich sorts to have a small sized stock, when they could support a large one in an equally perfect manner. Middle-sized rams, are, upon the whole, the most suitable and proper for lands in general, and for all the purposes of the breeder.

The practice of letting rams commenced about seventy years ago by Mr. Bakewell, and the prices have gradually been rising from sixteen shillings to *four hundred guineas!* This breeder made, of his whole stock of rams, three thousand guineas in one year. The prices given by graziers, for the sole purpose of getting grazing stock, seldom exceed ten guineas, which is considered as an extraordinary price, five or six guineas being most frequently given.

20. LEAPING.

The manner of treating rams has lately received a very great improvement. Instead of turning them loose among the ewes at large, as heretofore, and agreeably to the universal practice of the island, they are kept apart, in a separate paddock or small inclosure, with a couple of ewes only each to make them rest quietly; having the ewes of the flock brought to them singly, and leaping each only once. By this judicious and accurate regulation, a ram is enabled to impregnate near twice the number of ewes he would do, if turned loose among them, especially a young ram. In the old practice, sixty or eighty ewes were esteemed the full number for a ram: in the new, from a hundred to a hundred and twenty are allowed. Seven score have been served by one ram in a season: this is, however, much too great a number.

This method may be very judicious when a ram is much superior to others, but it is not usual. The shepherd, however, ought to be particular during rutting time. It frequently happens that a tup will drive an ewe, which is in season, out from the flock, and stand by her for a long time, for days even, without doing his duty. They should be separated as far as possible from each other. Sometimes a tup will follow an ewe not inclined to receive him for a whole day, while others in season will in vain solicit his attention; nay, he will often be so ungallant as to beat them off. In this case separation is also necessary.

Some people rub the breasts of the rams with some pigment, and remove every ewe which has any mark of it as having been served. This, however, is a practice which may occasion much disappointment, as tups often leap without accomplishing their purpose. Both tups and ewes should be in the best possible condition.

The period during which the rams are to go with the ewes, must be regulated by climate, and the quantity of spring food provided. It is of great importance that lambs should be dropt as early as possible, that they may not only be well nursed, but have time to get stout, and able to provide for themselves before the winter sets in. It is also of advantage to the ewes, that they may get into good condition before the rutting season.

21. THE EWE.

The ewe produces one or two lambs at a time, and sometimes, though rarely, three or four. She bears her young five months, and brings forth in the spring. The ram lives to the age of about fifteen years, and begins to procreate at one. When castrated they are called wedders: they then grow sooner fat, and the flesh becomes finer and better flavoured.

22. DIFFERENT BREEDS.

The variety in sheep is so great, that scarcely any two countries produce sheep of the same kind: there is found a manifest difference in all, either in the size, the covering, the shape, or the horns.

The *woolly sheep* is found only in Europe, and in the temperate provinces of Asia. When transported into warmer climates it loses its wool, and becomes hairy and rough; it is likewise less fertile; and its flesh no longer retains the same flavour.

It has been stated by lord Somerville, in his 'System of the Board of Agriculture,' that all the breeds of sheep in this kingdom may be arranged into two classes; those which shear the short or clothing, and those which shear the long or combing wool. And that the quality of the flesh in each class follows the character of the wool; the short-woolled sheep being close in the grain as to flesh, consequently heavy in the scale, and high-flavoured as to the taste; the polled long-woolled sheep more open and loose in the grain, and larger in size. By the author of 'The present state of Husbandry in Great Britain,' they have been distributed under three general divisions, as below:

1. The mountain breed;
2. The short-woolled breed; and
3. The long-woolled breed.

And among the first are comprised several varieties, as the black-faced, which range on the mountains of Wales, Westmoreland, Cumberland, Yorkshire, and those in the south, west, and north of Scotland, and in the Shetland islands; the Cheviot hills, in the south of Scotland, and north of England; and the forest and common sheep of the last mentioned country. In the second division are included those of Hereford, Dorset, Sussex, Norfolk, and some parts of Cumberland. And the third division comprehends all those varieties that are dispersed over the more rich and fertile parts of England, and which are distinguished under the titles of the Durham or Teeswaters, the Lincolnshires, the old and new Leicestershires, &c. But others divide them into *long*, *short*, and *middle-woolled* kinds.

23. *Teeswater Breed.*

This a breed of sheep said to be the largest in the island; it is at present the most prevalent in the rich, fine, fertile, inclosed lands on the banks of the Tees in Yorkshire. In this breed, which is supposed to be from the same stock as those of the Lincolns, greater attention seems to have been paid to size than wool. It is, however, a breed only calculated for warm rich pastures, where they are kept in small lots, in small inclosures, and well supported with food in severe winter seasons. The legs are longer, finer boned, and support a thicker and more firm and heavy carcase than the Lincolnshires; the sheep are much wider on the backs and sides, and afford a fatter and finer grained mutton. The weight per quarter in two years old wedders is from 25 pounds to 35 pounds, and in particular instances to 55 pounds or more.

24. *Lincolnshire Breed.*

This is a breed of sheep which is characterised by their having no horns; white faces; long, thin, weak carcases; thick, rough, white legs; bones large; pelts thick; slow-feeding; mutton coarse-grained; the weight per quarter in ewes from 14 pounds to 20 pounds; in three year old wedders from 20 pounds to 30 pounds; the wool from 10 to 18 inches in length; and it is chiefly prevalent in the district which gives the name, and other rich grazing ones. The *new* or improved Lincolns have now finer bone, with broader loins and trussed carcases, and are among the best, if not actually the best, long-woolled stock we have.

25. *Dishley Breed.*

This is an improved breed of sheep, which is readily distinguished from the other long-woolled sorts: having a fulness of form and substantial width of carcase, with a peculiar plainness and meekness of countenance; the head long, thin, and leaning backward; the nose projecting forward; the ears somewhat long, and standing backward; great fullness of the fore-quarters; legs of moderate length, and the finest bone; tail small; fleece well covering the body, of the shortest and finest of the combing wools, the length of staple six or seven inches.

26. *Cotswold Breed.*

This is a breed of sheep answering the following description: long coarse head, with a particular blunt, wide nose; a top-knot of wool on the forehead, running under the ears; rather long neck; great length and breadth of back and loin; full thigh with more substance in the hinder than forequarters; bone somewhat fine; legs not long; fleece soft, like that of the Dishley, but in closeness and darkness of colour bearing more resemblance to short or carding wool. Although very fat, they have all the appearance of sheep that are full of solid flesh, which would come heavy to the scale. It is said, some of these sheep have reached 40 and even 50 pounds a quarter, at two years and a half old, giving 11 pounds to 14 pounds of wool each sheep, and being fat, they are indubitably among the largest breeds in England.

27. *Romney-marsh Breed.*

This is a kind which is described by Mr. Young, as being a breed of sheep without horns; white faces and legs; rather long in the legs; good size; body rather long, but well barrel-shaped; bones rather large; and it is said that the weight per quarter, in fat wedders at two years old, is usually from 22 pounds to 28 pounds. In respect to the wool, it is fine, long, and of a delicate white colour, when in its perfect state. On this marsh 20 pounds of wool are supposed to be produced per acre.

28. *Devonshire Breed.*

This is a breed or sort of sheep which is chiefly distinguished by having no horns; white faces and legs, thick necks, backs narrow, and back-bones high; sides good; legs short, and bones large; and probably without any material objection, being a variety of the common hornless sort. According to

Mr. Culley, the weight of ewes on the average about 20 pounds a quarter: in wedders, at two years and a half old, 30 pounds. Length of wool much the same as in the Romney-marsh breed. It is a breed found to be prevalent in the districts from which it has derived its name. And it is supposed to have received considerable improvement by being crossed with the new Leicester or Dishley improved sort within these few late years.

29. *Black-faced Heath Breed.*

This is a kind or breed of sheep which, according to Mr. Culley, have large spiral horns, black faces and legs, a fierce wild-looking eye, short firm carcases, from 12 pounds to 16 pounds per quarter, covered with long, open, coarse shagged wool, fleeces 3 pounds or 4 pounds each, wool worth at present about 8*d.* per pound. They are an active hardy sort, running with amazing agility, and best adapted, of all other breeds, to exposed, heathy, and mountainous districts; seldom fed until three, four, or five years old, when they feed well, and make the finest mutton, having a high-flavoured gravy. The sheep of this wild-looking breed are natives of the north-west of Yorkshire, and of that mountainous tract of country adjoining the Irish sea, from Lancashire to Fort William: they have been of late years introduced into the western Highlands of Scotland.

The writer of the 'Treatise on Live Stock,' supposes the black-faced Linton, or short sheep of Scotland, to be a variety of the heath-sheep. They have been crossed with the Cheviot breed, and Mr. Culley, it is noticed, recommends a Dishley cross, meaning, doubtless, for the use of the low lands. If he may be allowed to give an opinion, he would, for upland situations, recommend a Spanish cross, with good winter management, in preference to all others.

30. *Ross or Ryeland Breed.*

This is a sort of sheep which is distinguished by the author of the 'Treatise on Live Stock,' by the want of horns, and having white legs and faces; by being small in size; and the wool growing close to the eyes; by the carcase being pretty well formed; and by the excellence of the mutton. Weight per quarter from 10 pounds to 18 pounds. Wool fine and short, the lean poor-fed sheep producing the finest. It is the true breed of this sort of sheep which is properly denominated Ryelands. In the Agricultural Report of that district, they are said, in symmetry of shape, and the flavour of the meat, to be superior to most flocks in the country. They lamb in February and March. It is a breed which, Mr. Knight says, is found to be remarkably easy in respect to food, but which in its management, requires cotting in the winter season, and being fed with hay or peas-haulm.

31. *The Dorsetshire Breed.*

This breed is known by having the face, nose, and legs white, head rather long, but broad, and the forehead woolly, as in the Spanish and Ryeland sorts; the horn round and bold, middle-sized, and standing from the head; the shoulders broad at top, but lower than the hinder quarters, the back tolerably straight; carcase deep, and loins broad; legs not long, nor very fine in the bone. Weight per quarter in Wedders, at three years and a half old, from 16 pounds to 20 pounds. Mr. Billingsley says, that the wool is fine and short. It is a breed which has the peculiar property of producing lambs at any period of the season, even so early as September and October, so as to suit the purposes of the lamb-suckler.

32. *The Wiltshire Breed.*

This is a sort which has sometimes the title of *horned crocks.* The writer on live stock distinguishes the breed, as having a large head and eyes, Roman nose, wide nostrils, horns bending down the cheeks, colour all white, wide bosom, deep greyhound breast, back rather straight, carcase substantial, legs long, bone coarse, fine middle wool, very thin on the belly, which is sometimes bare. He supposes, with Culley, that the basis of this breed is doubtless the Dorset, enlarged by some long-woolled cross; but how the horns come to take a direction so contrary, is not easy he thinks to conjecture; he has sometimes imagined it must be the result of some foreign, probably Tartarian, cross.

33. *The Berkshire Breed.*

The peculiar qualities of the Berkshire nott breed seem to be its great size, height on the legs, and weight when fattened. It would appear, contrary to the opinion of some, that this breed is well suited for the strong low lands of its native district, though the South Down sort are fast supplanting it in many places, probably without sufficient experience of them in such situations.

34. *The South Down Breed.*

This is a very valuable sort of sheep, which Culley has distinguished by having no horns, grey faces and legs, fine bones, long small necks, and by being rather low before, high on the shoulder, and light in the fore-quarter, sides good, loin tolerably broad, back-bone rather high, thigh full, twist good, mutton fine in grain, and well flavoured. Wool short, very close and fine, in the length of the staple from two to three inches. Weight per quarter in wedders at two years old 18 pounds. It is a breed which prevails on the dry chalky downs in Sussex, as well as the hills of Surrey and Kent, and which has lately been much improved both in carcase and wool, being much enlarged forward, carrying a good fore-flank; and for the short, less fertile, hilly pastures is an excellent sort, as feeding close. The sheep are hardy, and disposed to fatten quickly; and where the ewes are full kept, they frequently produce twin-lambs, nearly in the proportion of one-third of the whole, which are, when dropped, well-woolled.

35. *The Norfolk Breed.*

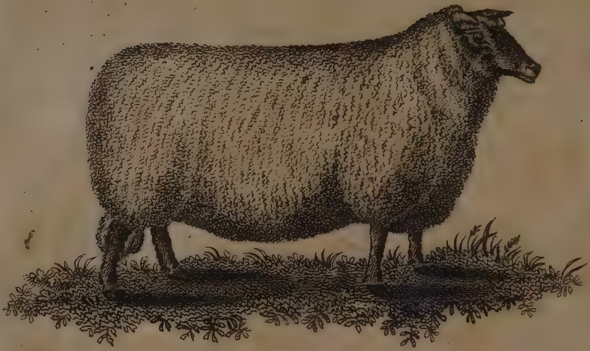
In this sort of sheep, the face is black; the horns large and spiral; the carcase long, small, weak, and thin; narrow chine; large bones; very long black or grey legs: mutton fine-grained and high-flavoured, but does not keep well in hot season. The weight per quarter from 16 pounds to 20 pounds. The wool in the best part, short and fine, but part coarse. This breed is chiefly prevalent in Norfolk and Suffolk, where folding is much the practice, as they have the property of travelling well. They are found in disposition to be given to be restless, which renders them unfit stock, except in good inclosures.

Crosses of the Norfolk, with the South Down and many breeds of other kinds, are met with and highly valued in different situations.

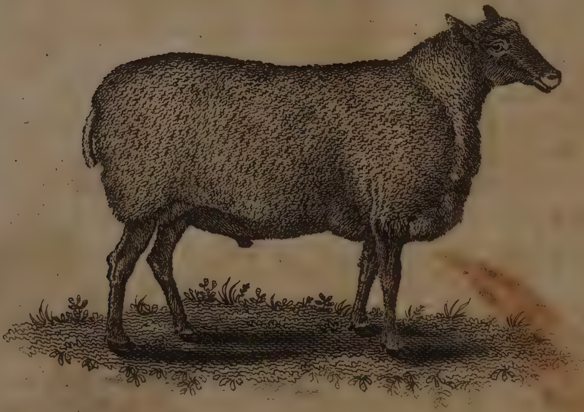
36. *The Herdwick Breed.*

This is a breed which is characterised by Mr. Culley by having no horns, and the face and legs being speckled: the larger the portion of white, with fewer black spots, the purer the breed; legs fine, small, clean; the lambs well covered when dropped; the weight per quarter, in the ewes, from 6 pounds to 8 pounds; in the wedders of four years and a half old, from nine pounds to 12 pounds; the wool short, thick, and matted in the fleece. It is a breed pecu-

THE LEICESTERSHIRE IMPROVED BREED.



A WEDDER OF MR CULLEY'S BREED.



liar to the elevated mountainous tract of country at the head of the river Esk, and Duddon in Cumberland, where they are let in herds, at an annual sum: whence the name. At present, they are said to possess the property of being extremely hardy in constitution, and capable of supporting themselves on the rocky bare mountains, with the trifling support of a little hay in the winter season.

37. *The Cheviot Breed.*

This breed of sheep is known by the want of horns; by the face and legs being mostly white, and the eyes lively and prominent; the belly long; little depth in the breast; narrow there and on the chine; clean, fine, small-boned legs, and thin pelts; the weight per quarter, when fat, from 12 pounds to 18 pounds; the wool partly fine, and partly coarse. Mr. Culley considers this as a valuable breed of mountain sheep, where the herbage is chiefly of the natural grass kind, which is the case in the situations where these are found the most prevalent, and from which they have obtained their name. It is a breed which has undergone much improvement within these few years, in respect to its form and other qualities, and has been lately introduced into the most northern districts; and from its hardiness, its affording a portion of fine wool, and being quick in fattening, it is likely to answer well in such situations. The Spanish and South Down have been advised as proper crosses for this sort of sheep.

38. *The Dun-faced Breed.*

This is a sort which Culley says has no horns; the face in common of a dun tawney colour; the size small; the tail short; the mutton fine in texture; the weight often only 6 pounds or 7 pounds the quarter; the wool variously streaked and blended with different colours, some of which is very fine.

He supposes it to partake of the Spanish breed, but it is not so hardy as the Cheviot breed. The mutton of this breed is excellent in flavour. They are supposed to have had a Spanish origin; but they have been naturalized for a great length of time, on the Grampian and other hilly districts in Scotland.

39. *The Shetland Breed.*

This is a small breed, and mostly without horns; but what more particularly distinguishes it from other breeds, is the uncommon smallness and shortness of the tail; the weight per quarter from 7 pounds to 10 pounds; the wool very fine, and of various colours. The breed is very hardy, but much too wild in its disposition to be confined in inclosed pastures, and of course less proper for the purposes of the grazier.

40. *The Merino or Spanish Breed.*

In this breed of sheep, the males have horns, but the females are without them. They have, according to lord Somerville, white faces and legs; the body not very perfect in shape; rather long in the legs; fine in the bone; a degree of throatiness, or production of loose pendulous skin under the neck; and the pelt fine and clear; weight, when tolerably fat, per quarter, in the rams about 17 pounds, in the ewes 11 pounds; the wool very fine. It is a breed that is asserted by some to be tolerably hardy, and to possess a disposition to fatten readily; but others maintain the contrary opinion. The Spanish cross with the South Down and Ryeland, in several degrees, is diffusing itself in many districts with great success.

41. *The Mugged Breed.*

This is a singular breed of sheep, which formerly prevailed throughout all the low lands of Northumberland. They had a short, coarse, curled wool, covering their heads, faces, and legs, and grew down to their feet; in form they resembled hill sheep; their shoulders low and sharp; sides flat; back rather arched; loins thin. It has been suggested, that this mugged appearance may have been the result of a Spanish cross. This sort of sheep has extended to Yorkshire; and traces of them are still visible, although they have long since given place to sheep of the long-woolled kinds. They are now chiefly met with in the northern counties.

42. *The Welsh Sheep.*

These, which are the most general breed in the hill districts, are small horned, and all over of a white colour. They are neat compact sheep.—There is likewise a polled short-wooled sort of sheep in these parts of the country, which are esteemed by some. The genuine Welsh mutton, from its smallness and delicate flavour, is commonly well known, highly esteemed, and sold at a high price.

43. *The Irish Breed.*

This is a breed of sheep which is described in this way by Culley. These sheep are supported by very long, thick, crooked, grey legs; their heads long and ugly, with large flagging ears, grey faces, and eyes sunk; necks long, and set on below the shoulders; breasts narrow and short, hollow before and behind the shoulders; flat-sided, with high narrow, herring backs; hind-quarters drooping, and tail set low. In short, they are almost in every respect contrary to what he apprehends a well-formed sheep should be.

44. ARGYLESHIRE BREEDERS.

In Argyleshire, the principal circumstances attended to by the most intelligent sheep-farmers are these; to stock lightly, which will mend the size of the sheep, with the quantity and quality of the wool; and also render them less subject to diseases. In all these respects, it is allowed by good judges, that 500 kept well, will return more profit than 600 kept indifferently. To select the best lambs, and such as have the finest, closest, and whitest wool, for tups and breeding ewes, and to cut and spay the worst. To get a change of rams frequently, and of breeding ewes occasionally. To put the best tups to the best ewes, which is considered as necessary for bringing any breed to perfection. Not to tup their year-old ewes; which, in bad seasons especially, would render the lambs produced by them of little value, as the ewes would not have a sufficiency of milk; and would also tend to lessen the size of the stock. To keep no rams above three, or at most four years old, nor any breeding ewes above five or six. To separate the rams from the 10th of October, for a month or six weeks, to prevent the lambs from coming too early in spring. To separate the lambs between the 15th and 25th of June; to have good grass prepared for them; and, if they can, to keep them separate, and on good grass, all winter; that they may be better attended to, and have the better chance of avoiding diseases. A few, whose possessions enable them to do it, keep not only their lambs or hogs, but also their wedders, ewes, &c. in separate hirsels; by which every shepherd, having his own charge, can attend to it better than if all were in common; and each kind has the pasture that best suits it.

45. GREAT EWES.

Great ewes should be moved about as little as possible; and kept from wet ground, dirty cots, and from every thing apt to injure their health, or disturb them. They are, when heavy, very liable to get awald; and when the shepherd discovers them in this situation, he should approach them with caution, and lift them gently. When an ewe has miscarried, it will be proper, if the weather be severe, or very cold, to bring her into a cot, and to keep her there till recovered; but during mild dry weather, she will be as well in the open air. When about to yearn, the ewes should be on the smoothest and driest ground, both for their own convenience, and that of their lambs when dropt. Nurse ewes should have good pasture, which should not be changed, while they give suck.

46. Lambing.

Lambs, when observed to drop on a place where they cannot easily rise, should be lifted and placed on their feet, but otherwise they may be left to themselves. They may be docked when a day or two old, which saves much trouble when the disease called Pinding attacks them. Docking makes them look very lively, as, while they are at their frisking time of life, their stumps have commonly a set or cock. The tail, which seems to be a useless and inconvenient appendage, need not be left longer than three inches. But this operation in the males, if pinding does not happen, should be deferred until the time for castration. Ewes, which have been docked, are not liable to lose their lambs by their being entangled by the tail at birth, an accident which happens much more frequently than shepherds are aware of.

Lambs that are in health are always lively. Such as do not appear to be inclined to sport with their fellows, should be looked at, and also their dams. Ewes, which appear unkind to their lambs should also be examined. In these cases, something will in general be found to be wrong. Distorted, or imperfect lambs, should be sold, or killed for home consumption.

As soon as the lambs are brought forth, they have commonly some milk from their mothers given them, or are allowed to suck them for some little time, which is supposed to increase the affection of the ewes for them; the lambs being at last left as close by the noses of the ewes as possible, which should be done quickly, that they may not go away without noticing them. The lambs are always greatly strengthened and improved by the ewes licking them, which they constantly do, where they have a proper affection for them. When lambs droop and hang their heads immediately after they are lambed, they are bad and unfavourable signs, as shewing them to be in a weak and dangerous state.

47. WEANING LAMBS.

Lambs should be allowed to suck during three months and a half, after which they may be taken up, and kept for a fortnight or three weeks at a distance from their dams; far enough from them to prevent their bleating being heard. The lambs will soon begin to feed heartily on grass, especially if they be allowed to go with the wedders.

Many are in the habit of milking their ewes after the lambs are taken up. It may be proper to take the milk from them once or twice at the interval of two days; but it is a bad practice to milk them for a length of time, as this hinders their getting into good condition before the rutting season.

48. VERMIN ON LAMBS.

In the event that lambs become troubled by vermin before smearing time, the following directions of Dr. Parry will be found useful. The *hippobosca-ovina*, or *tick*, is extremely injurious to sheep, by making the animal bite and rub itself, so as not only to hurt the fleece, but to break the skin; in consequence of which, the fly is apt to fix on the wool, near the wounded part, and there deposit its eggs. This troublesome animal may be, in a great measure, destroyed by pouring a solution of powdered white arsenic in boiling water, in the proportion of an ounce to a gallon, cold on the back of the sheep, and letting it diffuse itself down the skin on each side; in this method, however, several of the ticks escape by crawling to the extremities of the filaments. It will be still better to wash the lambs in the autumn, whether shorn or not, in a tub of a similar mixture. For this purpose, three pounds of the same arsenic, powdered, may be dissolved in six gallons of boiling water, and the solution mixed with forty gallons of cold water. The whole being then well stirred with a stick, the lambs may be plunged into it, great care being taken that they do not dip their heads, or taste the water. The liquor must be squeezed out of their fleeces back into the vessel, in order that it may not be wasted. It is scarcely *necessary* to point out the poisonous quality of this liquid, and how important it is to keep the vessel locked up, and after the operations are performed, to clean it well, or, rather, never to use it for any other purpose; and to throw the liquid which remains where not the smallest quantity of it can be drank by any creature whose life we value.

49. PINDING.

This is a disease incident to lambs; or rather is the effect of a degree of purging which sometimes attacks them when very young. The fæces being of a gluey nature, fix the tail upon the anus, and thus all passage from the bowels becomes interrupted. Docking prevents this from happening.

Inflammation sometimes attacks lambs in the bladder and intestines, and proves quickly fatal. When the intestines are inflamed, the disease is called the *grass ill.* The *louping ill* has not been sufficiently attended to, nor well described. It is thought to be a paralytic affection.

The *thwarter ill* is so variously described that Dr. Duncan has thought it necessary to divide it into species. But from the description given, it is impossible to find out its nature. It appears to come near to apoplexy, and to palsy, and some symptoms, as locked jaw, and wry neck, bring it near to tetanus, or universal spasm.

It is best to refrain from attempting to describe diseases which are not understood, and to be contented with expressing a hope, that some medical person, in the district where such diseases are said to prevail, will observe them, and describe them carefully.

MANAGEMENT OF SHEEP,

50. SHELTER.

Shelter is the first thing to be attended to in the management of sheep. While every good shepherd is decidedly hostile to their being confined, or to their being forced into shelter, whether they wish for it or not, it cannot be too strongly recommended to all sheep farmers, to put the means of avoiding the severity of stormy weather within the reach of their flocks at all times. Close confinement injures the health of all animals; and is hurtful in an especial manner to sheep, which, by nature, are of a roving disposition, and exceedingly fond of liberty. It is certainly a mistaken notion that fine woolled sheep are more tender, and more liable to be injured by cold, than those which carry coarse fleeces; and that they must, during the greatest part of the year, be kept in cots, as is practised on the continent. The wool of the fine breeds grows in a manner which renders it more effectual in resisting the rigours of winter, than that of the coarse kinds. The experience of several persons, who have introduced the Merino sheep into the Highlands of Scotland, seems to hold out the happy prospect of animals carrying the most valuable wool being seen dispersed over the whole kingdom. The perseverance of Sir John Sinclair has taught us that the Cheviot sheep are perfectly well adapted for the climate of the most northern parts of Scotland.

Merino sheep, which have been reckoned the most delicate, have been found capable of bearing very great degrees of cold, without being injured in the slightest degree. Cold, therefore, is not by any means an object of dread to the breeder of any kind of sheep, except during the lambing season, when sudden and severe cold, and chilling rains are, with reason, to be feared by every storemaster, as they are fatal to newly dropt lambs of every breed.

Drifting snow, excessive rain, and great heat, are the enemies which, in our climate, chiefly annoy our flocks.

51. Drifting Snow.

Natural shelter is seldom to be found in a mountainous country, so convenient as to be proof against sudden storms of snow. Recourse must therefore be had to art. There cannot be a better method of enabling sheep to escape from drifted snow than such inclosures as are mentioned by Mr. Hogg. Circular inclosures, surrounded by a wall of turf, will be fully as effectual as those constructed of stones, and will in most places be more economical, both in the original cost, and subsequent repairs. The space inclosed should be ample, and on dry ground. If the walls are built with turf, the base should be four feet thick, and the top two feet. The height should not be less than six feet. Two or three openings should be left towards the south; and a drain so constructed as to take off the wetness of the ground, rain water, and that from melted snow, should be dug round the outside, communicating by holes in the wall with the inside of the inclosure. After having been once or twice driven into these inclosures, or rings, the sheep will of their own accord draw towards them on the approach of snow. The shepherd will always find his flock assembled in the rings during snow, and he will not often have to risk his life by searching for lost sheep among wreaths. Clumps of Scotch firs have been found of great use on some farms; and now, when the rents of sheep pastures have become so great, (it may be said extravagant,) it is probable that sheep farmers will insist on some stipulation being made in their leases for plantations. It cannot be expected that tenants are to be at the expense of planting trees, which will only begin to be useful when half the period of the duration of an ordinary lease has expired. Plantations require time to grow, and some care and expence for their protection when young. It is needless to enter here on the subject of leases. It is enough to observe, that to ensure the prosperity of the tenant, and the security of a landlord, they should both be liberal, and inclined to accomodate each other.

In gentlemen's parks, and on low grounds, where attendance can be constantly afforded, there is less occasion for shelter. Clumps of trees, especially of spruce fir, the foliage of which is closer and more ornamental than that of the Scotch pine, will, however, be found extremely useful. Dry knolls should be chosen for them. There is one objection to all the pine tribe, that their leaves do not so quickly rot on the ground as the fallen leaves of other trees, which form soil and encourage the growth of grass. The prickly leaves of the pine may also hurt the fleeces. These considerations are of less importance than the safety of sheep; at the same time they may, in some measure, be obviated by planting firs only on the outside, and filling up the clump with birch, a tree which grows quickly and thrives in very thin soil.

As it is necessary in some situations to confine ewes with their lambs during night in order to defend the latter from foxes and dogs, it becomes requisite to construct cots and folds. The former should be airy, at the same time sufficiently close to prevent bad effects from rain or snow, and the latter should be spacious. Cots may be very easily and cheaply constructed after the manner of Highland cottages, where birch trees, or others having a natural bend, or branches of large trees, can be got. The frame work is constructed as follows: Two trees, or large branches, are laid together, so that the distance between the thick ends may be twelve or fourteen feet. The small ends are then morticed together and fastened with a wooden peg. About four feet below this a piece of wood is laid across, morticed and fastened; the ends projecting about a foot on both sides. Small projecting pieces are also fixed at the height where the roof is to begin. These parts are now called couples, and when a sufficient number have been prepared, they are set up at the distance of ten feet from each other. They are now joined together at top by straight trees being laid along into the forks made by the crossing of the ends of the couples. Similar pieces are laid along the sides resting on the projections, and the whole are fastened by means of pegs, similar to what ship carpenters call tree-nails. To form the roof, small straight trees, usually birch or Scotch firs, are laid across the rails, the thick ends being nailed to the lowermost rail. A rail is also fastened along the inside of the couples near the bottom. On this and the lower roof rail, are nailed spars, which are placed close together, but not so as to exclude a free circulation of air. In the front, spaces are left open at intervals. The thatch consists of heath, which is the most durable of all others. There is some art required in laying it on, although the operation appears to be very simple. The first layer consists of heath, having the thick roots cut off, and nicely arranged and fastened down by long pieces of wood tied with willow twigs to the frame work. The heath is then laid on without regard to the roots, except having them inmost. The thatch is laid on thicker and thicker towards the top, where it is fastened by means of thin sliced turf laid along. Moveable cots may be made with frames filled with straw, or heath, by means of wicker work; the sides being made of wicker work alone.

52. IMPROVED FOLD.

A sheep-fold has been lately invented by Mr. Plowman of Broome, Norfolk, upon an improved and very simple principle, combining many advantages over the old and expensive method of folding by hurdles; and as the whole fold can be removed with ease at all times, it will be found peculiarly useful in feeding off turnips on the land in frosty weather, when hurdles cannot be used. It is stated that the expence, in the first instance, will exceed that of hurdles, for the same given quantity of sheep; but having had one in use nearly three years, he is satisfied the saving will be very considerable: for, before he adopted this method of folding, he lost from thirty to forty nights folding in the year, owing to the land being hard in dry seasons; which renders folding almost impracticable, as they never can be set without great labour and destruction of hurdles. He is also clearly of opinion that the stock of sheep will be greatly increased when this method of folding becomes more known; and that it will enable many small farmers to keep from 50 to 100 sheep, who are now deterred from it on account of the small quantity of feed they have not answering to keep a man for that purpose only; but by this plan they may keep a boy at *3s.* or *3s. 6d.* per week, who can attend on 100 or 200 sheep, and move the fold himself without any assistance. In heavy gales of wind it frequently happens that the hurdles are blown down, and the sheep of course being at liberty to range over the crops, do incalculable mischief, which cannot happen with this fold. And in some counties in England, where hogs are folded, great difficulties are experienced for want of stowage, for them to feed off winter tares, &c. &c. as they root up every stake or hurdle; and having tried the experiment, he is certain this fold will keep them in, and defy their attempts to displace it. And an astonishing quantity of time is saved, as a man can remove a fold to contain 300 sheep in five minutes, which by the old method frequently takes some hours to accomplish. Many are now using folds from his model; and he received for the invention the gold medal of the society for the Encouragement of Arts.

It is further remarked, that where the fold is wanted to be used on very hilly ground, it must be begun at the top and worked down to the bottom for the ease of removing it, and then drawn up again with a horse. This, however, he has never had occasion to do, for his land is ploughed in a contrary direction, and he works the fold in the same course as the ridges. By this means the inconvenience is avoided of crossing the furrows; and they are also a guide to keep the fold in a straight direction. With respect to the sheep getting under, he does not recollect that circumstance to have ever happened, nor does he conceive that any land, which is cultivated, can be so uneven as to admit of it.

This sheep-fold is twenty-one feet in length, and three feet eleven inches in height, being composed of a top-rail, and bars below passed through uprights; the whole moving on low cast-iron wheels, and made strong, but in a light manner.

53. Effect of Rain.

As it is impossible to shelter even small flocks from rain, it is a fortunate circumstance that sheep are not very liable to suffer from it. During summer there is no danger to be apprehended from long continued rain drenching the fleece. But should this happen during winter, weak sheep will most probably suffer greatly. Attention to the health and comfort of sheep at other times, by bringing them to face the severity of winter in a strong habit of body, will be found to be the best method of defending them from rain.

54. Heat and Flies.

In mountainous districts, sheep have it in their power to remove from glens and hollows, where the rays of the sun frequently become oppressive. But on low grounds they are too often left exposed without having access to a shady place, in the scorching heat of summer, and to the torments inflicted by myriads of flies. The shades of trees, cots, and walls, are sufficient to enable sheep to avoid heat; but their enemies will follow them, and continue their attacks. Some method of keeping off flies must therefore be adopted: or at any rate, of destroying their eggs, which they deposit about the roots of the horns, and other parts of the head, and about the tail. The following ointment being rubbed about the root of the horns and tail, will be found to be of great use.

Strong mercurial ointment. -	1 part.
Rosin, - - - -	1 part.
Hog's lard, - - - -	3 parts.

Melt the hog's lard in a convenient vessel, and add the rosin. When these ingredients are well incorporated, add the ointment, and stir the whole well till it becomes cold, to prevent the mercury from sinking. Flies seldom become troublesome till after the time of taking off the fleece. But when sheep appear to be annoyed before that time, the ointment should be applied without delay to the head and tail, well rubbed on. The proportion of mercury is too small to have any effect on the animal, but is quite sufficient to make flies change their scene of attack, at any rate to destroy their eggs. Rubbing the head and tail with a composition of one pint of tar and four of train oil, has been found to answer the purpose well.

55. WASHING.

From the fleeces of sheep becoming much loaded and filled with dust and dirt of various kinds, in the hot summer season, by way of preparation for shearing, it is necessary to have recourse to the operation of *washing*. It was formerly the method of performing this business to have the washers standing up to the breast in the water; but from the inconvenience and danger of it, the men requiring a large supply of spirituous liquors, and being liable to be attacked with colds, rheumatisms, and other diseases, as well as being apt to dispatch the work with too much expedition, so as to leave the wool insufficiently clean; it has been proposed by Mr. Young, in his Calendar, to rail off a portion of the water (in a stream or pond) for the sheep to walk into by a slope mouth at one end, with a depth sufficient at one part for them to swim; and to pave the whole: the breadth need not be more than six or seven feet; at one spot to let in on each side of this passage, where the depth is just sufficient for the water to flow over the sheep's back, a cask, either fixed or leaded, for a man to stand in dry. The sheep being in the water between them, they are washed in perfection, and pushing them on, they swim through the deep part, and walk out at the other mouth, where a clean pen, or a very clean dry pasture, is to receive them. Of course there is a bridge rail-way to the tubs, and a pen at the first mouth of the water, whence the sheep are turned into it, where they may be soaking a few minutes before being driven to the washers. But other more cheap contrivances may be provided where there is clean water at hand for the purposes. Sheep should on no account be driven on dry or dusty roads after this operation.

But in all cases before this work commences, the lambs should be separated from the ewes and other sheep, and each be put in separate pens. With these it is seldom necessary to do much more than just swill them through the water, without their being touched by the washers. As soon as they have been washed, the sheep should have a clean hard pasture for a few days, until they are perfectly dry, and in a proper condition to be shorn.

56. SHEARING.

This usually begins with the month of June. There is no part of their business in which common shepherds appear so slovenly as in this. They usually mangle the fleece, and leave the sheep's backs covered with tufts of wool, to the great loss of their masters. The closer wool is clipped the better. It would appear that some sheep, which carry the finest fleeces, do not naturally shed their wool annually; but ordinary sheep do, and ought to be shorn just before the wool begins to separate. Neatness in shearing can only be acquired by practice. The only rules which can be written are, use shears of a moderate size, and take up very little wool between them. Perhaps it would be an improvement that the sheers should have blunt points, which may prevent many accidents, and render the operation easy and expeditious, by giving confidence to the shearer, that he is in no danger of wounding the sheep. After being shorn, sheep are much exposed to the tormenting attacks of flies and other vermin. They should be carefully examined, and all keds, ticks, &c. picked off. The following unguent should then be well rubbed on every part of the animal. The roots of the horns may be anointed with the composition mentioned under the article heat.

Take,

Train oil, - - -	4 gallons.
Tar, - - - -	half a gallon.
Oil of turpentine, -	1 pint.

Instead of the tar and turpentine, what is called the spirit of tar may be used, while the oil of turpentine continues to be so high priced.

Dr. Parry recommends the shearing of fine woolled lambs about the beginning of August, having found that the hog fleeces grow finer, when the lamb fleeces have been removed. This practice promises considerable profit; an argument in favour of its adoption, of a very powerful kind. There does not appear to be any danger to be apprehended from the operation at that season of the year; and the wool will have time to grow to a sufficient length, for defending the animal from cold, rain, and snow, before winter sets in.

At the time of clipping, and indeed at all other times, when the flock is collected, every individual should be carefully examined; and any wounds or sores should be cleaned and dressed. The feet should be looked at, and every animal which has swelled or ulcerated limbs should be separated from the flock. These, and all others which seem to be sickly, should be kept at home until cured. Sheep ought to be collected and examined more frequently than at the usual stated times.

It is an excellent practice with many good sheep-farmers, to clip off all the coarse soiled wool about the thighs and docks, some weeks before the usual time of washing and clipping the sheep; as by this means the sheep are kept clean and cool, when the season is hot, and with ewes the udders are prevented from becoming sore. This practice is common with some South Down sheep-masters, as well as in Yorkshire.

57. MARKING.

It is usual, after the shearing has been performed, to mark the sheep with reddle, ochre, or some similar substance; and some also cut the ear in different ways. The marking with tar has been said to be prejudicial; but where a small quantity is only employed, little injury can be sustained. In almost all the sheep districts of the kingdom, except in Dorsetshire, the tails of sheep are shortened, which seems to be an useful practice in keeping the animals more clean behind, and of course less liable to be stricken with the fly. It has, however, been suggested, in the ninth volume of the Annals of Agriculture, that by this custom the sheep may be rendered less able to drive away the flies. The general prevalence of the practice would, however, seem to prove its being of advantage. There is much difference in the manner of performing the business in different districts, in respect to the length; but four or five inches being left are quite sufficient. It is usually done while the animals are young. In all sheep-pastures the hedges should be well cleared from briars, as their coats are often injured by being torn by them; and all sorts of pernicious reptiles should be as much as possible destroyed, and removed from such land.

58. CASTRATING LAMBS.

In respect to the business of castrating or gelding the lambs, it may be performed at any time from the age of a fortnight or three weeks to that of a month or six weeks; and in some districts it is deferred to a considerably later period. It is, however, the safest method to have it executed early, as there is less danger of too much inflammation taking place. But in all cases, the lambs should be in a healthy state when it is done; as under other circumstances they are liable to be destroyed by it. The operation is usually performed by the shepherd, by opening the scrotum or cod, and drawing out the testicles, with the spermatic cord. This he often does with his teeth, in the young state of the animal. But where the operation is performed at a later period, it is usual to have recourse to the knife; the arteries being taken up, and secured by means of ligatures or the searing-iron. The business, if possible, should be done in fine weather, when not too warm; and the gelded lambs be kept in a dry, sheltered, quiet situation, for a few days, until the inflammation is gone off. If it should happen to be wet at the time, it may be adviseable to have them under some sort of shelter, where they can have room to move freely about.

59. FOOD.

Variety or frequent changes, in the nature of food, tend to derange the uniform action of the bowels, and to bring on diseases which often prove fatal. During summer and winter, sheep are commonly healthy, when they are not absolutely starved. It is chiefly in spring and autumn when they show symptoms of bad health. Sudden changes in the quality of their food, are the causes of the general unhealthiness experienced at these seasons of the year. Such alterations are not more injurious than quick transitions from plenty to scarcity, and from scarcity to plenty. When an animal has been highly fed, and accustomed for a length of time to eat regularly, any sudden alteration in its habits soon occasions disease. On the other hand, nothing is more dangerous to an animal which has been starving, than placing it all at once in the midst of plenty.

It is of consequence that sheep-pastures be uniform, whether rich or poor. Wet grounds, where water stagnates, are unfit for sheep pasture. Wet peaty ground is not so dangerous, nor is there much risk when sheep go on land over which water trickles constantly. Stagnant pools, where rank grasses grow, should be carefully avoided, as in such situations sheep are liable to the rot.

Turnips, as a holding-out winter food for sheep, are unquestionably excellent, particularly when not given in too large quantities, and with some sort of dry food with them, as sainfoin hay in this season, common hay, cut pea, bean, or wheat straw. There is also said to be an advantage in having them drawn one or two days before they are used, in some districts, and even in having them stacked. But potatoes are thought a much better food than turnips in other parts where sheep are a great object, as being more fully and regularly to be depended on, and as preventing the diseases to which the animals are liable in a more effectual manner. The Swedish turnip come into use the latest, as in the early spring.

Cabbages, as a food for sheep, are of great importance and utility in many situations, particularly in those where the land is suitable for raising them, though it may not be of the very rich quality.

The *artificial* grasses, such as rye-grass and red clover, are of much consequence as spring food for sheep; the first is early, and comes in after common turnips, when much wanted.

Tares, rye, and cole, are in great request as spring food for sheep-stock, the first being raised on the stronger sorts of land, the second on such as are of a lighter quality, and the last on many kinds, even the hilly calcareous sort. They are all sufficiently early for being fed in April, or the following month, when turnips are done. Spring tares are likewise often put in to be fed off at the close of the autumn.

The stubble turnip system of food is very good in this sort of husbandry, for late spring or other feed; where crops of such kinds take well in succession to those of other sorts.

The plan of preserving after-grass for the purpose of sheep-feed is certainly very useful, especially for the support of ewes and lambs in the early spring. It provides well for the time of scarcity.

The practice of converting young wheat crops to spring sheep-food is seldom good. It is mostly the business of necessity and want of foresight in the sheep manager. On light and dry lands it may occasionally be useful, but it often does much harm.

Winter barley, and some other sorts of crops, have also been tried as sheep-food, but hitherto only by particular individuals on a small scale.

Whatever the nature of the food which is raised with this design may be, it should always be provided in ample abundance to the quantity of sheep-stock which is to be kept, as no sort of pinching ever answers any good purpose in this management. Good water should likewise be constantly attended to in this practice.

60. FATTENING SHEEP.

Sheep under this treatment should never be suffered to have any sort of want of fresh food. They should never be kept too long upon any inclosure or grass-piece, or any other sort of keep, so as to be compelled to feed upon the sullied or trampled food, as it always greatly retards the fattening of the animals, or what is termed proof, which is constantly the most promoted by the allowance of only the prime fresh food.

There are many different sorts of food made use of in this business, such as the different sorts of turnips, which are very extensively applied in this system, and some use them alone; but it is probably a better practice to give some sort of dry food with them, especially where the common turnip is employed, as it is more watery and less nutricient than that of the Swedish kind. Cut hay, chaff, bran, corn, oil-cake, all answer well in this intention; and of the first two or three sorts they should have a pretty full supply; but the latter, from their expence, should be more sparingly given; several pounds of oats, however, will be required for each sheep per day, according to the kind and size.

With oil-cake, some give half a cake a day to each sheep; but the quantity must depend in some measure upon the other keep which they have. All food of this sort should be given in moveable troughs, divided in the middle, so that the sheep may feed on each side, with a sloping roof over them, so as to cover the sheep's heads and necks while feeding, as wet is not only prejudicial to the sheep, but spoils the cake. A rack for hay, fixed over the trough, might probably be made to answer in this intention; while it would be very convenient for holding that material, and preventing waste. The whole should be fixed on wheels, and be made to stand steady, and a sufficient number for the quantity of sheep be always in readiness.

Steamed or baked potatoes, cheap convenient contrivances for the preparation of which have been lately invented, have been supposed by some to be preferable to turnips as a food in this intention. They have been employed raw in the proportion of eight or ten pounds per sheep in the course of the day or night; but they are certainly a much better food in their prepared state. The quantity of common turnips consumed by each sheep in the same length of time, is usually about eighteen or twenty pounds. Where this last sort of crop is good, an acre is supposed to support about five score sheep in the field, six or seven weeks in the winter season; an acre of good grass supporting at the rate of one hundred couples from five days to a week.

In the fattening of wedders, the use of barley meal, with grass or some other sort of green food, has likewise been found highly beneficial, and when it can be procured at a reasonable rate, should not be neglected, as it is quick in rendering them fat, and the mutton is excellent. Different other articles are occasionally made use of as the fattening food of sheep, such as peas and beans, or pea and bean meal in the winter season, and some substances of other kinds. In the sheep-fattening system, it is often of advantage to have a portion of land, of a superior rich quality, for the purpose of finishing them out upon.

The profits will materially depend on the proportion, the richness, and the quality of the farmer's fattening to his other lands, on the judgment which he possesses in the buying in lean stock, the nature of the season, the state of the markets, the losses sustained, the expences of the management, &c.

DISORDERS OF SWINE.

SWINE are subject to many disorders; but they are so similar to those before noticed in other animals, as to render a regular detail unnecessary. Most of the complaints of this animal arise from the want of cleanliness. Swine delight in clean litter and a clean sty, and they are never healthy and thriving when this is neglected.

1. Cracked Ears.

Where the parts behind the ears, as is often the case in some sorts of swine, crack and become sore in hot seasons, they should be anointed with a little saturine ointment; and where the udders of the sows take on hard glandular swellings, as is sometimes the case, the use of camphorated saturine washes or ointments may be employed with benefit, care being taken to have the parts clean wiped before the pigs are admitted to suck. In such cases, half a dram of calomel may likewise be usefully given every second or third night, for two or three times, by which a favourable change may be induced.

2. Spaying.

This is the operation of cutting, castrating, or removing the female parts of different kinds of animals, as sows, heifers, mares, &c, in order to prevent any future conception, and promote their fattening. It is usually performed by cutting them in the mid-flank, on the left side, with a sharp knife or lancet, in order to extirpate or cut off the parts destined to conception, and then stitching up the wound, anointing the part with tar-salve, and keeping the animal warm for two or three days. The general way is to make the incision in a sloping manner, two inches and a half long, that the fore-finger may be put in towards the back, to feel for the ovaries, which are two kernals as big as acorns, one on each side of the uterus, one of which being drawn to the wound, the cord or string is cut, and thus both taken out.

Several graziers and farmers have lately adopted the practice of spaying old cows and heifers. Some have suggested the propriety of spaying fillies. An able writer on this subject says, 'The chief reason why a practice, which is beneficial in so many points of view to the interests and advantages of the farmer, has been so little attended to, is the difficulty which is constantly experienced from the want of a sufficient number of expert and proper persons for performing the operation. Such persons are far from being common in any, much less in every district; as some knowledge of a nature which is not readily acquired, and much experience in the practice of cutting, are indispensibly necessary to the success of the undertaking. Whenever, however, the utility and benefits of the practice become better understood and more fully appreciated by the farmer, and the operators more numerous, much greater attention and importance will be bestowed upon it; as it is capable of relieving him from much trouble, of greatly promoting his profits, and of benefiting him in a variety of ways. The facts are long since well proved and ascertained, that animals which have undergone this operation, are more disposed to feed or take on flesh, more quiet in their habits, and capable of being managed with much greater ease and facility in any way whatever, than they were before it was performed. It may also have advantages in other ways in different sorts of animals: it may render the filly, in the horse kind, nearly equal to the gelt colt for several different uses; and the heifer, in the neat cattle kind, nearly equal to the ox, for all sorts of farm-labour. The females of some other sorts of animals may likewise, by this means, be made to nearly equal the castrated males in usefulness for a variety of purposes and intentions; and in all cases be rendered a good deal more valuable, or manageable, than they are in the present custom which prevails with them.'

3. Ringing.

This operation is easily performed, and there is a constant necessity to keep all sorts of swine constantly well ringed, in order that they may rest quietly in the sties, and of course thrive in a more perfect manner. This has also been effected by cutting away the cartilage of the nose, in which there is no danger.

4. Breeding Swine.

Whatever the breed or sort of swine it may be that is employed in the raising of the stock, the most perfect and best formed male and female animals of the same or other proper kind should be selected for the purpose. In providing hogs or swine for the purposes of breeding, they should constantly be well fed and taken care of, as by being stinted in their food and neglected, their growth and healthy condition are considerably affected.

5. Best Form of Swine.

The hog or swine, to be well formed, should not be too long, but full in the head and cheek; thick and rather short in the neck; fine in the bone; thick, plump, full, and compact in the carcase; full in the quarters; fine and thin in the hide; and of a full size, according to the sort, whatever it may be; having a disposition to fatten well and expeditiously at an early age. Varro, and also Columella, however, describe what was considered in their time as the marks of a good hog, to be a small head, short legs, long bodies, large thighs and neck, and the bristles, particularly on the neck, thickset, erect, and strong.

It is observed by the author of the General Treatise on Cattle, that depth of carcase, lateral extension, breadth of the loin and breast, proportional length, moderate shortness of the legs and substance of the gammons, and fore-arms, are great essentials. These are qualities, he thinks, to produce a favourable balance in the account of keep, and a mass of weight which will pull the scale down. In proportion too as the animal is capacious in the loin and breast, will be generally the vigour of his constitution; his legs will be thence properly extended, and he will have a bold and firm footing on the ground, to which, however, it is farther necessary, that his claws be upright, even, and sound. He adds, however, that a good hog may have a coarse, long, ugly head and ear; and these may be safely classed among the non-essentials; yet a short, handsome, sprightly head, with light, pointed, pendulous ears, of moderate size, are pleasing to the view, and may sometimes have a favourable effect in the market. For head and ears, the Oxford, or rather smaller Berkshire pigs, are good models; and for true shape, the improved Shropshire, Hereford, and Gloucester.

If colour deserve any consideration, he should prefer the light and sandy and yellow-spotted; at least such skins appear far the most delicate when dead. In respect to the skin of pork, he gives a preference to the thick over the thin skin: and he remarks, that our best bred pigs are often thick-skinned; but such skin is tender, gelatinous, shining, easy to masticate, even in the shape of roasted crackling, and very nutritious; whereas to eat the crackling of thin-skinned pork, case-hardened by the action of fire, requires teeth equal to the division of block-tin. The health of swine is to be estimated by their cheerfulness, by the gloss upon their coats, and their skin being whole and free from eruption. It is an extremely unfavourable indication when the head is hung down, the snout approaching the earth like a fifth leg, and when the flanks heave and are hollow. If pigs *bark* (snort) on being alarmed, it is an excellent sign of sound health and good keep.

6. VARIOUS BREEDS.

It may be observed, that the breeds or varieties of these animals are so extremely numerous, that almost every county or district of the kingdom is in possession of a particular kind. But they may be distinguished into the large and small sorts, of the former of which, the following are the most valuable breeds:

7. *The Berkshire Breed.*

This is a breed which is distinguished by being in general of a tawny, white, or reddish colour, spotted with black; large ears hanging over the eyes; thick, close, and well made in the body; legs short; small in the bone, having a disposition to fatten quickly: when well fed, the flesh is fine. The above county has been long famous for its breed of swine. But, according to the author of the Treatise on Live

Stock, the Berkshire breeders have made a very judicious use of the pug-cross, by not repeating it to the degree of taking away all shape and power of growing flesh, in their stock; and he is informed they now mean to discontinue any farther mixture. The breed, as it now stands, is about in the third class in point of size, excellent in all respects, but particularly as a cross for heavy slow-feeding sorts. The small porking variety of Berks, and those of Oxfordshire, with round carcases, short and handsome heads, appear to him to have descended from the Axford breed. On the whole, it is an useful breed, that has extended itself from the district from which it takes its name over most parts of the island. It is the sort mostly fattened at the distilleries: it feeds to a great weight, and is good for either pork or bacon. This sort is supposed by many as the most hardy, both in respect to their nature, and the food on which they are fed. The Berkshire is, however, a sort of hog that requires constant good keep, declining fast under other circumstances.

8. *The Hampshire Breed.*

This is a kind of large hogs which is longer in the body and neck, but not of so compact a form as the Berkshire: they are mostly of a white colour, or spotted, and are well disposed to fatten, coming up to a great weight, when properly managed in respect to food. But the writer of the late work on Live Stock says, they are generally dark-spotted, some black, of a longer and flatter make than those of Berks, ears more pointed, head long and sharp, resembling the Essex. However, he speaks of them as they are found in the range of Basingstoke and Andover. They are generally, he says, bought up with the Berks stock, the dealers themselves being inattentive to any distinction between the two varieties. The goodness of the Hampshire hog is proverbial, and he has never observed in any breed greater or quicker proof.

9. *The Shropshire Breed.*

This is another large sort of hogs, which are found valuable where the keep is in sufficient abundance for their support. They are not so well formed as those of the Berkshire kind, or equal to them in their disposition to fatten, or to be supported on such cheap food. The standard colour of this breed, according to the above writer, is white or brinded: and that anterior to the late improvement, they might be looked upon as nearly as possible the original large breed of England. They are a breed of the largest size, flat-boned, deep and flat-sided, harsh or rather wiry-haired, the ear large, head long, sharp, and coarse, leg too long, loin, although very substantial, yet not sufficiently wide, considering the great extent of the whole frame. With all their defects, they were, he says, ever excellent stock, and have been improved within the last fifteen years by the Berkshire cross, which has reduced the length both of their legs and carcase, and rendered their heads lighter: in consequence the new variety, shewing the Berkshire spots and form, feeds quicker than the old sort of these animals. Shropshire has long been employed in breeding stores for the supply of the London feeders, and of the Essex farmer, who thus turn their clovers to the most profitable account.

10. *The Gloucestershire Breed.*

This is likewise a large breed, but inferior to either of the above, being tall and long in shape, and by no means so well formed. The colour is in general white. It has two wattles hanging from the throat. Mr. Marshall supposes this to have been the prevailing breed of the island.

11. *The Herefordshire Breed.*

This is also a large useful breed. The writer on Live Stock thinks it a variety of the Shropshire, or an intermixture which cannot now be traced. He says they are shorter, have less bone, and lighter heads; ears smaller, thinner, and more pointed; coats somewhat less harsh than those of Shropshire; and are quicker feeders; colour originally light. There may be found in this breed many individuals of the truest form; they are generally good sound stock, full of growth, and assuredly among the most profitable bacon-hogs we have.

12. *The Wiltshire Breed.*

This is a long-bodied low hog, hollow about the shoulder, and high on the rump; middling, large, pointed ears; round bone; light in colour. It is stated by the above writer on Live Stock, that of late years this breed has been crossed with the pug and the Berkshire sorts, and that the new variety appeared to him smaller than the old breed, and darker in colour, spotted, with round carcase, handsome pug face, and some with prick-ears; and that this cross is by no means a new thing.

13. *The Yorkshire Breed.*

This, in the old kind, was, it is said by the writer above cited, probably the worst large variety we had; extremely long-legged and weak-loined, their constitution not of the soundest sort; and bad sty-pigs in the winter season; they were yet quicker feeders than some of the superior breeds.

14. *The Northamptonshire Breed.*

This breed was formerly a handsome, light-eared, white, deep-sided pig, with middling bone, and quick of proof; the breeders have since tried the new Leicester, but without success.

15. *The Norfolk Breed.*

This is a small, short, up-eared, porking sort, various in colour, white, blueish, striated; generally an inferior kind, which it would be to the interest of that great corn county to improve: they are, however, of a thin-skinned, quick-proving kind. But in the vicinity of Lynn, and generally on the Lincoln side of the county, there is a larger-spotted variety of very good form and quality, which should be encouraged.

16. *The Suffolk Breed.*

This is a small, delicate, white sort of pig, which has for many years had great reputation; and at this time, there is not only a strong prejudice in their favour in their own county, but they have many advocates out of it. They are shorter, and more pug-formed than the Norfolks; and by their dish-face and pendent belly, it may be supposed that the variety proceeded originally from the white Chinese. Some of the Suffolks are very handsome, and very regularly shaped: their defects are, that they are great consumers in proportion to their small bulk, and that they produce little flesh.

17. *The Essex Breed.*

This is a sort which are up-eared, with long sharp heads; roach-backed; carcases flat, long, and generally high upon the leg; bone not large; colour white, or black and white; bare of hair; quick feeders, but great consumers, and of an unquiet disposition. A mixture of the tonky with this old breed produced an improved and shorter variety, called the *half-blacks*, a very useful kind of pig.

In other counties, also, there are many other varieties, which it is unnecessary to mention here.

Of the smaller breeds the principal are,

18. *The Chinese Breed.*

This is a breed which is distinguished by the neck being thick; the body very close, compact, and well-formed; the legs very short, and the size small; the flesh delicate; the colour various, as black, white, brown, and tawny. This breed is particularly disposed to fatten in an expeditious manner, and has, in consequence, spread over a great part of the kingdom. It is most adapted for being used as pork; but is much too small for being cured for bacon. It is mischievous when not well rung.

19. *The small white English Breed.*

This is another breed of the small kind of hogs, that is met with in many districts. It is of a white colour; thick, compact, and well made in the body; short in the leg; the head and neck well formed; and the ears slouching a little downwards. It is well disposed to fatten, and perfectly hardy. It prevails much in the northern districts.

20. *The swing-tailed Breed.*

This is an useful sort of the smaller kind of hogs, that is hardy in its nature, and of considerable weight in proportion to its size.

21. *Remarks.*

In respect to the varieties of these animals, Mr. Donaldson remarks, that the Berkshire and Hampshire hogs are the largest; but that it is most probably from the Berkshire stock that the greatest number of varieties of the country have sprung. And that they are of a very large size, the four quarters frequently weighing, when fat, not less than from 600 to 800 weight: the medium weight of the hogs fattened for hams and bacon do not, however, exceed from 300 to 400 weight. The above writer speaks of a breed in the northern parts of Scotland, whose appearance being very different from that of any other sort in the island, denotes them, it is thought, to have been the original breed of the country. They are small, ill-formed, bristly, wild-looking animals, and are very probably the remains of that breed, which we may suppose to have ranged through the forests and woody parts of the kingdom for ages in a state of nature.

22. BOARS AND SOWS FOR BREEDING.

The best stock may be expected from the boar at his full growth, but not more than from three to five years old. No sows should be kept open for breeding unless they have large capacious bellies. Being well fed from the teat, the sow will procreate at seven months; and if she be of the kind in which the strong tendency to fat increases the risk of bringing forth, probably the suffering her to breed as early and as quickly as possible may contribute to amend the defect. It is also hinted, that if a sow of this description would admit the boar the third, or within a few days after pigging, imposing upon her the severe task of constant breeding and suckling would doubtless keep her sufficiently lean and roomy for the production of a good litter. It is probable, however, that the quality and size of the pigs would suffer. But some suppose it better to defer the sows taking the boar till ten or twelve months old, as she becomes more strong and affords better litters of pigs; and that the boar should always be a year old or more before he be put to the sows, as by this delay he attains a better growth, and is more vigorous.

It may be remarked, in respect to the period of being with young, that in the sow it is about four months; and the usual produce is from about eight or ten or twelve pigs in the large, but more in the smaller breeds, which in general bring the greatest number, and the most early.

In the ordinary management of swine, sows, after they have had two or three litters, may be killed; but no breeder should part with one, whilst she continues to bring large litters, and to rear them with safety, although custom often induces the farmer to kill such sows, and to substitute others of not perhaps half the value in their places. In cases where swine are made an object to the farmer, great care should be taken to have a good boar constantly along with the sows, in order that a proper succession of young pigs may be produced. By this means the sows are likewise made to take the boar more expeditiously.

23. PIGGING.

It has been observed by a late writer, that as there is great difficulty and expence attending the rearing of young pigs in cold seasons, the farmer should contrive as much as possible to have his litters early in the spring and autumn seasons, as about the end of March or beginning of April, and the latter end of July, August, or beginning of the following month; as at these periods much less loss will be sustained in the death of the pigs, and less expence be incurred in food. The litters which are pigged in June, or the early part of the following month, should always be reared, as being highly profitable and advantageous. But it is seldom adviseable to keep the late autumn litters, as the cold in the winter is almost sure to destroy many of them, and cause much loss thereby. With a late litter, it may however, sometimes be beneficial to suffer them to suckle and feed with the sow, the keep being of the most forcing kind, during three or four months, from which management the most delicate pork might be provided at a scarce season.

In all cases, however, great care should be taken that the sows, as they advance in their pregnancy, be lodged separately, lest their bellies be hurt by others lying upon them; and it is of still more consequence, that no other swine be within reach of them at the time of bringing forth, since in that case the pigs would most probably be devoured as they fall. The sows should also be attended in pigging with much care, in order to preserve the pigs; and it may be necessary sometimes during three or four days afterwards. Such sows as have the unnatural propensity of devouring their young, should be well secured at the time, and be disposed of as soon as possible, as they never do any good in keeping as breeders. It is found that dry, warm, and comfortable lodging is of almost as much importance as that of food, in this system of management; the sows and pigs not being turned abroad by any means in bad weather. The pigs may be weaned in about eight weeks, after which the sows may be shut up, feeding them well, and on the return of their milk, they will mostly express very plainly their desire of taking the boar. The sows require to be fed in an extraordinary manner while they are nursing, particularly if they have a number of pigs to support.

In the management of these animals, it is of great utility and advantage to keep the different sorts separate and distinct from each other, as the sows in pig, those with pigs, and the stores according to their ages; as it is only in this way that they can be kept to the most profit and advantage.

24. REARING PIGS.

As the breeding of pigs is a business that affords the farmer a considerable profit and advantage in various views, it is of essential importance that he be provided with suitable kinds of food in abundance for the support of the numerous sows that it will be necessary for him to keep, and the great number of pigs that must be raised. Upon this being properly and effectually done, his success and advantage will in a great measure depend. The crops capable of being cultivated with the most benefit in this intention, are beans, peas, barley, buckwheat, potatoes, carrots, parsnips, Swedish turnips, cabbages, lettuces, clover, lucern, chicory, &c.

The sows considerably advanced in pig, and those with pigs, should be fed in a better manner than the store pigs. The former should be supplied with good wash twice or oftener in the day, and have a sufficient allowance of cabbages, potatoes, carrots, or other similar vegetables, so as to keep them in good condition; which is shewn by the gloss of their coats. The sows with pigs should be kept with the litters in separate sties, and be still better fed than those in pig. Where dairying is practised, the wash of that kind which has been preserved for the purpose, while the dairying was at the height, in brick cisterns, constructed for receiving it from the dairy, must be given them, with food of the root kind, such as carrots, parsnips, potatoes, and cabbages, in as large proportions as they will consume them, in order that the pigs may be properly supported and kept in condition. But where the business of dairying is not carried on so as to provide wash of that sort, meal of some kind or other must, Mr. Young thinks, be had recourse to for the making of wash by mixing it with water, which in the summer season, will be sufficient for their support; and in winter it must be blended with the different sorts of roots prepared by boiling, or, when for the young pigs, with oats and pea-soup. With this soup and dairy-wash, where proper attention is bestowed, young pigs may, he conceives, be weaned and reared in the winter season even with profit and success.

The pea-soup is an admirable article when given in this intention; it is prepared by boiling six pecks of peas in about sixty gallons of water, till they are well broken down and diffused in the fluid; it is then put into a tub or cistern for use. When dry food is given in combination with this, or of itself, the above writer advises oats, as being much better than any other sort of grain for young pigs, barley not answering nearly so well in this application. Oats coarsely ground have been found very useful for young hogs, both in the form of wash with water, and when made of a somewhat thicker consistence. But in cases where the sows and pigs can be supported with dairy-wash and roots, as above, there will be a considerable saving made, by avoiding the use of the expensive articles of barley-meal, peas, or bran and pollard.

Mr. Donaldson remarks, that in the usual mode, the pigs reared by the farmer are fed, for some weeks after they are weaned, on whey or butter-milk, or on bran or barley-meal mixed with water. They are afterwards maintained on other food, as potatoes, carrots, the refuse of the garden, kitchen, scullery, &c., together with such additions as they can pick up in the farm-yard. Sometimes they are sent into the fields at the close of harvest, where they make a comfortable living for several weeks on the gleanings of the crop; at other times when the farm is situated in the neighbourhood of woods or forests, they are sent thither to pick up the beech-mast and acorns in the fall of the year; and that when they are arrived at a proper age for fattening, they are either put into sties fitted up for the purpose, or sold to distillers, starch-makers, dairy-men, or cottagers.

25. Hog-Sty.

Hog-sties are usually built in a very plain and simple method, the chief objects being considered those of warm dry situations for the animals to lie in, with small areas or yards before them, and proper troughs fitted up for holding their food. They are most commonly constructed with lean-to or shed-roofs, and have but seldom more than six or seven feet width, with height in the same proportion. In order to have them as convenient as possible, they should be at no very great distance from the house and offices, being well placed for the kitchen and dairy, but as little connected with the other out-buildings as may be. Some have suggested the great propriety and advantage, in particular cases, of having them connected in such a manner with the scullery, as that the whole of the refuse articles from it may be readily conveyed to them by means of pipes or other similar contrivances.

Where they are at a distance they should constantly be so situated as that the servants need not have occasion to enter the farm yards in the business of feeding them.

Although it be the common notion that hogs are naturally filthy in their habits, there are probably very few domestic animals that are more pleased when they have clean comfortable beds, and certainly not any on which cleanliness has a more evident effect, so far as thriving, feeding, and fattening are concerned. With the view of keeping them perfectly dry at all periods, a slight, but sufficient degree of inclination or slope outwards should constantly be given to the floors of the sties, as well as those of the areas or yards with which they are connected, and proper drains be constructed for conveying away any moisture that may be present in them. The outside yards should also be a little raised above the surface of the ground, and the sties somewhat elevated above the yards. It is necessary also that there should be a number of divisions, in order to keep the different kinds of hog stock separate, as there should never be too great a number kept together, it being found by experience that they thrive and fatten better where the numbers are small, and as nearly as possible similar in the sizes. Suitable divisions are consequently to be formed for female hogs when with the boar; others for breeding swine, as well as for their farrowing in; and still others for properly weaning the young pigs in, for keeping the store pig stock in, and for fattening the hogs of proper ages in. Where the nature of the situations will admit of it, the areas or yards should be pretty extensive. And in cases where it can be done, it is of vast advantage to have water conveyed through them, as it serves not only to keep them clean with greater ease and facility, but answers a variety of other beneficial intentions.

All pig-sties should be provided with rubbing-posts, without which the animal is usually dirty, dull, and ragged.

26. Fattening Swine.

The fattening of hogs is a business usually performed at two different times of the year, as in October and February or March; the former is however, the most principal period. In this system, various substances have been recommended; but those most commonly employed are some sort of farinaceous material, with skimmed milk, and dairy or other kinds of wash. For the smaller sorts of fattening hogs, coarsely ground oats mixed with these washes are excellent. Barley-meal and pollard are likewise frequently made use of for the purpose, with much success. The meals of peas and beans, when given in sufficient proportions for the purpose of fattening, are apt to heat them too much, and produce a difficulty of breathing; but for the large or full grown hogs, pea-meal, or peas unground, are probably the best material that can be made use of. A portion of bean-meal, or whole beans, may likewise be given occasionally, with advantage, as both these articles contain a much larger proportion of nutritious matter in the same bulk, according to Darwin, than any other sort of grain, and are more lasting in their effects on the system, from their undergoing the process of digestion more slowly, perhaps on account of their containing a larger proportion of oil in their composition. Malted barley given whole has likewise been found highly beneficial in the fattening of hogs, the quantity of sweet nutritious matter being thus greatly augmented, according to Mr. Bannister. Acorns in the same state have likewise been found to fatten hogs, but they cannot be depended on as a food for this use. Potatoes and carrots have also been occasionally tried in the same application; but as they never answer well without being boiled and combined with the meal of some sort of grain, it is a much better and more economical practice to convert them to the purpose of store-feeding, and depend upon farinaceous substances for fattening the animals.

The dairies, according to the author of Modern Agriculture, in Hampshire, Gloucestershire, &c. are the great sources whence the butchers draw their supplies of hogs, as well as porkers. Just, says he, as the dairies are employed, either in the making of butter, or of cheese, so whey mixed with barley-meal, or skimmed and butter milk, are the chief sorts of food on which the hogs on a dairy-farm are fattened. Many are the incidental additions daily made to the stock of provisions set apart for the fattening of hogs; in short, every sort of offal from the dairy, the kitchen, &c. is thrown into the trough;

but milk and whey, or barley-meal, with an allowance of peas and beans; for a few weeks before they are killed, constitute the chief articles of food given to fattening hogs on all dairy farms. And it is added that very great numbers of hogs are annually fattened at the distilleries in the various parts of the kingdom. It is stated in the Report of the County of Surrey, that between nine and ten thousand are fattened on the grains, wash, and other offals of three distilleries only in that district.

27. Curing Swine's Flesh.

It may be noticed, that in different districts there are different modes of curing the flesh of swine, according to the intention for which it is wanted. In the county of Kent, when cured as bacon, it is the practice to singe off the hairs, by making a straw fire round the hog, an operation which is termed *swaling*. The skin, in this process, should be kept perfectly free from dirt of all sorts. When the flitches are cut out, they should be rubbed effectually with a mixture of common salt and saltpetre, and afterwards laid in a trough, where they are to continue three weeks or a month, according to their size, keeping them frequently turned; and then, being taken out of the trough, are to be dried by a slack fire, which will take up an equal portion of time with the former; after which, they are to be hanged up, or thrown upon a rack, there to remain till wanted. But in curing bacon on the continent, it is mostly the custom to have closets contrived in the chimnies, for the purpose of drying and smoking them by means of wood fires, which is said to be more proper for the purpose. And a more usual mode of curing this sort of meat is that of salting it down for pickled pork, which is far more profitable than bacon. In this method after the hog is cleaned of the hair, and the head taken off, together with the legs and hands, and the necks, loins, and all the lean bones cut out, which will amount to nearly two-thirds of the whole hog, the remaining part, which is the fat or prime pork, is to be cut into pieces of the size proportioned to the circumference of the salting-tub, and every piece rubbed on each side and on every part with common salt, having some beaten saltpetre sprinkled on each. The bottom of the tub should also be covered with salt, and when the pork is sufficiently powdered, the pieces laid in, with the rind upwards, and every one pressed down with all the strength that can be used, and wedged in so close as to leave no apparent chasms. Over this layer is to be spread a covering of salt, with a very slight sprinkling of saltpetre, as too much makes it hard. In about a month or five weeks, the brine will begin to rise, and, in a short time afterwards, cover the whole surface of the tub; but if, from a defect in the salt, it should fail to dissolve into brine within that period, it will be necessary to make a quantity of brine, and pour over the pork; for unless the whole be covered with brine, it will not keep well. In adding the brine, care should be taken not to disturb the pieces of pork, as that often does much mischief to the meat.

But in the county of Westmoreland, where the curing of hams has been long practised with much success, the usual method is for them to be at first rubbed very hard, generally with bay-salt; by some they are covered close up; by others they are left on a stone bench, to allow the brine to run off. At the end of five days they are again rubbed as hard as they were at first, with salt of the same sort, mixed with rather more than an ounce of saltpetre to a ham. Having lain about a week, either on a stone bench, or in hogsheads amongst the brine, they are hung up by some in the chimney amidst the smoke, whether of peats or coals: by others, in places where smoke never reaches them. If not sold sooner, they are suffered to remain there till the weather becomes warm. They are then packed in hogsheads with straw, or oatmeal seeds, and sent to the places of sale. It has been found by experiment, as stated in the survey of that district, that hams lose 20 per cent of their weight in the curing, which fully demonstrates the advantage and economy of consuming them without this sort of preparation.

28. GENERAL REMARKS.

We have thus given a general and comprehensive sketch of the diseases of swine, and the best mode of breeding, rearing, and feeding them. On the former subject, we beg leave again to refer our readers to the preceding observations on the diseases of other animals, and which are also applicable to pigs. No attempt has yet been made to offer a clear systematical arrangement of the disorders of this useful animal. Mr. Lawrence very candidly acknowledges, that, though he has paid great attention to this subject, and suffered considerable loss from it, 'he knows very little of the matter; and that you may as well doctor, or drench the devil as a pig.'

The most formidable disorder to which these animals are liable is inflammation of the lungs, and other internal parts, for which bleeding and opening medicines are undoubtedly the grand remedies; but there is some difficulty in performing the operation of bleeding upon pigs. The method commonly adopted is to cut off part of the ears or tail; but a sufficient quantity of blood cannot be drawn in this way. 'The best mode of bleeding,' observes Mr. White, 'is to open a vein in the roof of the mouth, about an inch from the front teeth, in a line between the second and third tooth; afterward about two ounces of castor oil should be given. Sulphur is a good laxative for pigs; the dose, from two to three drachms. Epsom salt is also a good purgative; the dose from one to two ounces.'

Nothing tends more effectually to preserve the health and promote the growth of pigs, than the liberal use of hay-tea. Clover, sainfoin, and lucern, are the best. The tea should be thickened with either grains, or bran, or pollard, or any kind of meal, or boiled cabbages, or boiled potatoes. Carrots also are excellent, when they can be procured. This, given in a lukewarm state twice a day will produce a wonderful effect in quickening the growth, and giving a rich and delicious flavour to the flesh. The hay should be inclosed in a net, and the potatoes should be steamed over the tea, whilst gently boiling or simmering. The hay, after boiling, may be dried, and perhaps offered to store cattle, or else thrown to the pigs as litter, or to add to the dung-heap. The soporific qualities of this wash disposes the animal to sleep; and Mr. Saunders, in the Agricultural Magazine, affirms, that one sack of meal used to thicken this wash, will go as far as two sacks in the common mode.

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THE DISEASES OF DOGS.

THIS truly valuable creature has engaged the attention of mankind from the earliest ages, and the utmost care has been taken in training and rendering him subservient to the important purposes of domestic utility: but the proper treatment of the various disorders to which he is subjected, like every other branch of medical knowledge, is still susceptible of much improvement.

1. HYDROPHOBIA.

The first symptom of this dreadful malady appears to be a slight failure of appetite, and a disposition to quarrel with other dogs. A total loss of appetite generally succeeds, though they sometimes lap water the day before their death, which generally happens between seven and ten days after the first symptoms have appeared. A mad dog will not cry out on being struck, nor show any sign of fear on being threatened. In the height of the disorder, he will bite all other dogs, animals, or men. When not provoked, he usually attacks only such as come in his way; but, having no fear, it is very dangerous to strike or provoke him. Mad dogs appear to be capable of communicating the infection early in the disorder, and as soon as they begin to quarrel with and bite other dogs. The eyes of mad dogs do not look red or fierce, but dull; and have a peculiar appearance not easy to be described. Mad dogs never bark, but occasionally utter a most dismal and plaintive howl, expressive of extreme distress, and which they who have once heard, can never forget. Mad dogs do not foam, or froth at the mouth; but their lips and tongue appear dry and foul, or slimy. Though mad dogs generally refuse both food and water, in the latter stage of the disorder; yet they do not show any abhorrence of water, will pass through it without difficulty, and lap it eagerly to the last, without appearing to experience any uneasiness from it; but they do not swallow a drop. It is seldom in less than ten days, that the symptoms appear after a dog has been bitten; in some instances it has been six or eight months before the disorder has appeared. Mr. Meynell has given a very accurate description of this dreadful disorder, which appears to be the result of much experience; and he is fully persuaded, that the disorder never originates from hot weather, putrid provision, or from any other cause but the bite. He thinks the most certain sign of beginning madness is an unusual disposition to quarrel with other dogs, and that the disorder always comes on so gradually, that mischief may be prevented by proper care.

Many remedies have been proposed for canine madness, but all of them appear to have failed after a fair trial. Cold bathing seems to have held its reputation longer than any other, both as a preventive and as a remedy. It was recommended about two hundred years ago, by the Seigneur d'Esparron, in his 'Fauconneric,' who relates a wonderful instance of a 'mad dog being thrown into a river with a cord about his neck, which, being entangled in the root of a tree, kept him under water, except as much of his nose as enabled him to breathe. In this situation he remained for three days, when he got loose, and returned to his master's house as cheerful and healthy as ever he was.'

As we are not acquainted with any means of curing this disorder, prevention is an object of great importance; and the only effectual mode of accomplishing this is to cut out the bitten parts completely, and apply either the actual cautery (red hot iron), or some powerful caustic to the wound. Nothing short of this should ever be depended upon. And as it is of consequence to know some criterion by which the beginning of this disease may be distinguished, it may be proper to repeat, that the most certain sign we are acquainted with is an unusual disposition to quarrel with other dogs.

The best preservatives from this baneful disorder are plenty of water, whey, greens, physic, air, and exercise. Let the hounds be well observed at the time when they feed, and there can be no danger whilst they eat. Remove a hound in time if he refuse his meat: and if the whole pack be in the same predicament, let them be chained up separately. Pretended cures sometimes protract the disorder, as they have been the occasion of its breaking out a long time afterwards. Suspected dogs should be immediately separated from the rest, and a short time, if no remedy be used, will prove whether they are really bitten or not. If desirous of trying a remedy, Mr. Beckford recommends the following prescription, which has also been suggested by Dr. James:

Turbit's mineral, - - 8 grains.

Next morning,

Turbit's mineral, - - 16 grains.

And, on the third morning,

Turbit's mineral, - - 32 grains.

The dose is to be given three mornings successively. The dog should be empty when he takes it, and bled the previous day. The dose should be given early in the morning, and the dog may have some thin broth, or pot-liquor, about two or three o'clock, but nothing else during the time he takes the medicine. The best way to give it is in butter, and made up into balls with a little flour. Care must be taken that he does not throw it up again. After the last day of the medicine, he may be fed as usual.

All remedies, however, are fallacious, though various are the drenches and medicines which are given for hydrophobia, and said to be infallible.

2. Worming.

This operation has been considered as a preventive of madness, even from the time of Pliny. This wonderful operation is termed *Worming*; and, from the following description of it, which we have taken the liberty to copy from Mr. Daniel's Rural Sports, one is almost persuaded to believe, that there is really something like a worm under the dog's tongue; and that if a dog happen to be infected with madness after this *terrible worm* has been extracted, his tongue swells to such a degree as to render him incapable of closing his jaws, or biting.

The worming of whelps should be previous to their being sent out to quarters. This operation is to be performed with a lancet. The skin being opened, which immediately covers the *worm*, a small awl is then to be introduced, so as to raise it up. The farther end of the *worm* will, with very little force, make its appearance: and, with a cloth, taking hold of that end, the other will be drawn out easily.

So says Mr. Daniel, in his Rural Sports. 'I have often performed this operation,' says, Mr. White, 'but cannot say that I had any expectation of its doing good, or felt the slightest confidence in its prophylactic power,' Dr. Blaine says it is a custom founded on ignorance, and should not be perpetuated by any written directions how to perform it.

3. DISTEMPER.

This is another grievous disease, frequently fatal to the canine race. It has not been long known in this country, but it is almost inconceivable what numbers it has destroyed in so short a period. It seems, happily, to be now on the decline; at least, it is less frequent, and more mild, and probably in time may be entirely removed. In 1803, it carried off a great number of cats; but ever since it seems to have been confined entirely to dogs. Before this disorder was known, hydrophobia was more prevalent; yet there is a great difference between the two maladies: puppies are not so liable to madness as full grown dogs, but they are more liable to the distemper. A dog seldom drinks freely in the distemper: in hydrophobia he never drinks, though he may perhaps make the attempt. In hydrophobia the dog loses all recollection of persons and places, and will as soon bite his master as any other person; but in the distemper he retains his recollection, and never bites.

The distemper generally begins with an appearance of dulness and want of appetite, cough, watery eyes, and a discharge from the nostrils. As the disease advances, the dog becomes very weak, particularly about the hind parts, and loses flesh rapidly. There is generally a convulsive twitching of the head and one of the fore-legs; sometimes the dog is attacked with violent fits, running round and foaming at the mouth. In some cases, the disease is accompanied with costiveness; in others, there is a purging, and such tenderness of stomach, that every thing the animal swallows is soon thrown up again. The disease attacks with different degrees of violence, and in some seasons has proved much more destructive than in others. The distemper generally occurs between the age of four and twelve months.

Mr. Blaine observes, that the distemper appears to vary in different seasons. In one year, most of the cases that occur prove distressing, from the obstinate looseness that accompanies the disease; in the next year, fits perhaps will be the prevailing symptom; while the third year will exhibit the complaint in a most putrid and malignant form. Fits are most prevalent in winter, and purging in summer. The varieties are so numerous, that hardly any two cases can be treated alike; consequently, no one remedy can be applicable to every case.

In the treatment of this disease, we must be guided in a great measure by the circumstances of the case. In slight cases, where the bowels are not in a loose state, a cure is easily effected, merely by giving a little castor oil, sulphur, or jalap, keeping the animal warm, and giving him warm broth, warm milk, &c. It appears, indeed, that putting him into a comfortable warm place, and nursing him carefully, form very essential parts of the treatment. Emetics are very commonly recommended, at the commencement of the distemper; but though they sometimes appear to succeed, they often do mischief. When the eyes are much affected, a large seton in the neck will do good. Mr. Taplin imagined that the distemper depends on an accumulation of hard excrement in the bowels; but this certainly is not the case; and though purgatives are generally proper at the beginning of the disease, one dose is commonly sufficient, for the animal soon becomes too weak to bear any kind of evacuation.

When the distemper is acompanied by purging, nothing is more useful than sago, or arrow root, given frequently; and should this be found ineffectual in checking the looseness, a few drops of laudanum, according to the age and size of the dog, may be added. When the stomach is so irritable as to reject every thing that is swallowed, a little laudanum should be given; and if this fail, a very small quantity of wine may be tried.

But as this disorder varies so much in appearance and requires such correct observation to ascertain the best mode of treatment, it will be proper to enter more into detail.

The following medicines, says Mr. Richard Lawrence, have been frequently successful:

Calomel, - - - -	1½ grain.
Rhubarb, - - - -	5 grains.

To be given every other day.

Jesuit's bark, - -	half an ounce.
Dragon's blood, - -	half an ounce.
Gamboge, - - -	half an ounce.

To be made into pills about the size of a hazelnut, and one to be given every other day.

Great benefit has been also found from the syrup of buckthorn; its nature is to operate as physic, at the same time that it contributes, in some measure, to the nourishment of the animal. Many are fond of giving castor oil, which, in general, a dog throws up almost immediately; this, however, never happens with syrup of buckthorn.

The following is Mr. Thornhill's treatment of this disorder.

'When you first perceive the dog to be ill, give him half an ounce of salts dissolved in a tea-cup full of warm water, and at night, ten grains of compound powder of ipecacuanha in a little warm water, and keep him in a warm place. If you do not perceive him to get better in two or three days, give him sixteen grains of antimonial powder, and two grains of powdered foxglove, mixed with conserve of roses, sufficient for four boluses; give him one at night and morning for two days, and, on the third, a tea-spoonful of powdered Peruvian bark, three times in the course of the day, in a little milk. If the distemper still increase, a rowel on the neck, as near the head as possible, will be found of great service. The rowel should be kept running, till the animal recover, which will be in the course of a few weeks, if kept warm and quiet.'

We are told by this celebrated sportsman, that he almost invariably cured his own dogs in this manner; but he, no doubt, found it very difficult to administer the salts, &c.

R. Lascelles, esq. in his Letters on Sporting, says, that 'the remedy which is first applied is the most likely to be effective; and the following, if administered in proper time, I seldom knew it to fail;

Calomel, - - - -	10 grains.
Emetic Tartar, - - -	20 grains.

'Let these be made into a large bolus, and divided into twelve equal portions, one to be given every other morning fasting.

'The diet should be warm strong broth; and a single course of this medicine, in the earliest stage of the complaint, will effectually cure it; but should it happen that the disorder has been making, for any time, a *secret* progress, we must then pursue a more systematic method.

'The two most dangerous symptoms are, at the beginning, excessive looseness, and afterwards fits. So long as the first continues, no medicine will have any effect, and a dog in this state can scarcely ever be persuaded to feed; to remove this half an ounce of powdered gum-arabic, and the same quantity of prepared chalk, must be mixed together, and divided into twelve small balls; one, two, or three to be given during the day, until the purging is stopped: I would then decline any immediate medical process for a couple of days, during which time isinglass, boiled in milk, and given in small quantities every four hours, will assuredly relieve the dog from the effects of relaxation; the calomel and emetic tartar may be again administered, and, under such treatment, I have seldom known a dog but which eventually recovered.

'Fits are, of all symptoms, the most to be dreaded; and their violence is frequently of that nature as to prove immediately fatal; at least a dog seldom survives after a third. They generally appear when he has made considerable progress towards amendment, and you are therefore, taken more by surprise and unprepared: a perseverance in the medicine, after a supposed recovery has taken place, is the most likely method of preventing a relapse: and I invariably pursue this system to the extent of three doses, administering one every two days, and taking, at the same time, especial care to keep the animal particularly warm. If the calomel should operate contrary to your intended purpose, that is, by promoting the purging, it will be advisable to give the dog about half a grain of opium, in twenty minutes from the time he had the previous dose, being also particularly careful that he is *well* and *warmly* supported.'

Mr. Blaine has written largely, but rather confusedly, on this subject. But, as a general rule, the simplest remedies are the best. Simple food, warm and dry shelter, and the occasional use of sulphur, are the most effectual preventives.

4. FITS.

Dogs are subject to fits, and though these fits are not very different in appearance from each other, they arise from very different causes, and, consequently, require very different treatment. The epileptic fits, which are attended with strong convulsions, attack dogs of all ages, and even those which are apparently healthy. They generally arise from costiveness, the distemper, &c. and are very difficult of cure. In dogs of full habit, bleeding, emetics, and occasional aperients, should be resorted to. The following medicines have been recommended:

Calomel, - - -	12 grains.
Powdered foxglove, -	12 grains.
Powdered misletoe, -	2 drachms.

Mix, and divide into nine, twelve, or fifteen parcels according to the size of the dog, and give one every morning. After these have been fully tried, in case the attacks do not relax, take—

Lunar caustic, finely powdered,	2 grains.
Cobweb, - - - -	5 grains.

Mix these with conserve of roses sufficient to make nine, twelve, or fifteen balls, according to the size of the dog, and give one every morning.

Some dogs are so irritable, that whatever raises any strong passion in their minds produces an epileptic fit: hence, dogs much confined, on being suffered to run out, frequently have an attack of this nature. This violence of disposition often produces fits in pointers and setters when hunting. The best remedies, therefore, are to give the former more exercise, and to habituate the latter to a greater plenty of game. Fear, in irritable dogs, also produces fits; therefore, such should be less threatened or chastised. Fits also proceed from the repletion of the vessels in the head; for which, bleeding, and an occasional purgative, are necessary; and whenever they become habitual, a seton should be applied and kept in some months. The immediate fit may be removed at once by plunging the dog into cold water, or throwing water on his head. A healthy dog may have a fit through simple costiveness, and, in such case, an active purge should be administered; indeed, this remedy should be applied, though the dog be not costive.

Bitches, while suckling, if burthened by too many puppies, are sometimes subject to very dangerous fits, or convulsions, which frequently prove fatal to them. No bitch should be allowed to rear more than two at a time.

Teething in puppies sometimes produces fits.—Some sportsmen, aware of this, are apt to consider all the fits of puppies to proceed from this cause alone; though they may be the precursors of the distemper, or the effect of worms.

5 WORMS.

The bowels of dogs are often infested with worms, for which a variety of remedies have been recommended. Mr. Daniel, in his Rural Sports, recommends aloes, hartshorn, the juice of wormwood, with some flowers of sulphur, mixed together into a ball, about the size of a hazel nut, which is to be wrapped up in butter, and given two or three times a week, letting the dog fast for a few hours each time. This, he says, will effectually destroy the worms. He also says they may be destroyed by giving the dog as much finely powdered white glass as will lie on a sixpence, for three successive mornings, mixed up with butter; if the worms are not voided in that time, the dose of glass is to be increased, and given for three other mornings; in which time, he says, it will scarcely ever fail of producing the desired effect. Pewter filings, as much as will lie on a shilling, have been recommended as an effectual remedy for worms. White recommends the following mixture as the best vermifuge that can be employed:

Jalap, - -	from 10 to 15 grains.
Powdered aloes,	from 3 to 5 grains.
Calomel, -	from 2 to 3 grains.

To be mixed with a little butter, and given early in the morning. The dog to be tied up till the third day, and not allowed to take any cold liquids.

Cowhage has been found an excellent medicine for destroying worms. When dogs can be made to take them, Epsom salts, in moderate daily doses, will both destroy and expel them. The thread-worms are best destroyed by aloetic clysters. The tape-worm has been removed by mercurial purges. The following remedy is strongly recommended:

Cowhage, - - -	half a drachm.
Common salt, - -	1 drachm.
Tin filings, produced by a very thin file, -	2 drachms.

If the salt prove an emetic, it must be omitted.

6. THE MANGE.

This disease is of four kinds; the red, the common, the spungy, and the surfeit: The red mange is more difficult to cure than the common, but is less infectious. A bitch lined by a mangy dog is very liable to produce mangy puppies, and the progeny of a mangy bitch is certain to become affected sometime or other. The morbid constitutional action by which mange is generated is excited by various causes, and in different ways. If a number of dogs be confined together, the acrid effluvia of their transpiration, &c. may beget a virulent mange, very difficult to be removed. If a dog be fed on salt provisions, it will become subject to the disorder, and full feeding, as well as poor living, will be a certain cause of it.

The red mange is known by the red inflammatory colour of the skin; the whole skin of the body, particularly in white haired dogs, is in a state of active inflammation; it is hot to the feel, and itches intolerably. In this kind of mange, the hair is often specifically affected, and becomes altered in its colour, particularly about the extremities: it also falls off, and leaves the body almost bare. The strong coarse kind, called *wire-hair*, is peculiarly liable to suffer this discolouration.

The following are deemed the best cures for the red mange:

Powdered charcoal, -	1 ounce
Prepared chalk, - -	1 ounce.
Sugar of lead, - -	1 drachm.

White precipitate,	2 drachms.
Sulphur,	2 ounces.
Lard,	5 ounces.

To be well mixed, and applied externally.

Or,

Mercurial ointment,	1 ounce.
Powdered aloes,	2 drachms.
Lard,	6 ounces.

To be well mixed, and applied externally; but great care must be taken to prevent the animal catching cold. Mercurial ointment, though effective, is attended with considerable danger.

In slight cases of the red mange, the following will be found successful:

Corrosive sublimate, powdered,	6 grains.
Liver of sulphur,	half an ounce.
Lime-water,	6 ounces.

To be mixed, &c.

Internal remedies are also necessary. The following is recommended as a proper dose:

Æthiop's mineral,	1 ounce.
Cream of tartar,	1 ounce.
Nitre,	2 drachms.

Divide into sixteen, twenty, or twenty-four doses, according to the size of the dog, and give one every morning and evening.

Mr. Beckford proposes the following remedy for the red mange:

Quicksilver,	4 ounces.
Venice turpentine,	2 ounces.
Lard,	1 pound.

The quicksilver and turpentine are to be rubbed together till the globules disappear. When applied, an ounce must be rubbed once a day upon the part affected, for three successive days. This is only to be used when the hair comes off, or any redness appears.

The common mange may be cured by some brimstone alone, powdered fine, and taken inwardly, either in milk, or mixed with butter, or the powder may be made into an ointment with hog's lard, and a small quantity of oil of turpentine, and the dog rubbed with it every day.

Large millet and sweet turnip-roots boiled in cows' urine till it is like broth, is a salutary ointment. The dog should be rubbed three or four times.

When the disease becomes obstinate, and scabby eruptions appear on various parts of the body, take,

Tobacco, in powder, -	half an ounce.
White hellebore, in powder,	half an ounce.
Sulphur, in powder, -	4 ounces.
Aloes, in powder, -	2 drachms.
Lard, - - -	6 ounces,

Mix it well, and rub once a day for a week: let fresh straw be also put into the kennel every other day.

The following is not only a clean remedy, but probably the best:

Foxglove leaves, - -	2 ounces.

Put them into a jug, and pour upon them a quart of boiling water: when cold, wash the dog, and repeat the washing every other day. A few washings will effect a cure.

The spongy mange requires the same wash that the red does.

The surfeit mange requires little variety in the treatment, except that bleeding and purging are more necessary. In this and all other kinds of the disease when the sores are very irritable and much inflamed, it will be frequently necessary to allay the heat previous to external applications; for this purpose take—

Sugar of lead, - - -	1 drachm.
Spermaceti ointment, -	2 ounces.

When the irritation is allayed, apply the washes directed for the red mange.

It requires, at least, two hours to dress a dog properly. The hair should be parted, and the ointment applied entirely to the skin, by means of a stick. After every part is done, let the hair be smoothed down, and the dog will appear, when the operation has been well performed, as if nothing had been applied. After three or four dressings in this manner, the dog may be washed with soft soap and water, and this ointment again applied till the cure is complete.

We should always take care to prevent the mange. Air, exercise, wholesome food, and cleanliness, are the best preservatives; though during his exercise, a dog may catch it from a stranger.

7. Internal Ulceration of the Ear.

In this complaint the dog continually shakes his head from the intolerable itching. It sometimes terminates fatally. Before the ear becomes moist with matter, a dry, red scab appears. This ulceration originates from over-feeding, heat, confinement, but more particularly from being too frequently in the water.

External applications are highly beneficial, and, in some mild cases, (particularly when it is supposed to have been produced or increased by swimming much, or too frequent washing, are all that are necessary. In the early stages, the following wash will be sufficient:

Sugar of lead, - -	half a drachm.
Rose or rain-water, -	4 ounces.

Dissolve the sugar of lead in the water, and pour a small tea-spoonful (previously warmed to a blood heat to prevent surprise) into the ear night and morning, and rub the ear well to promote the entrance of the wash into the cavities.

In more obstinate cases add to the wash—

White vitriol, - -	15 or 20 grains.

And if, instead of rose or rain-water, a decoction of oak-bark be made use of to form the wash, it will greatly promote the cure.

In some cases, verdigris, mixed with oil, has proved beneficial; also, calomel and oil.

The following remedies are also recommended:

Shag tobacco, - - -	2 ounces.

To be boiled in a quart of water until it becomes a pint, into which, while warm, dip the dog's ears till the water reaches an inch above the affected part. To be repeated three successive days.

Or,

Strong mercurial ointment,	1 ounce.
Lard, - - -	half an ounce.

To be mixed together, and well rubbed in every third day, first washing the ears with soft soap and warm water.

8. External Ulceration of the Ear.

This complaint is very different in appearance from the canker in the ear; it consists of an ill disposed ulcer, which is usually situated on the lower edge of the flap of one or both ears, dividing it into a kind of slit. This is kept in a continued state of irritation by the shaking of the dog's head. It is remarkable, that smooth-coated dogs (pointers and hounds) are the only ones, in general, affected with this outer canker; while long-haired dogs (Newfoundlands, setters, and water-spaniels) are more subject to internal canker of the ear. Pointers and hounds, who have been *rounded*, by having their ears cropped, are less liable to it, than those who have their ears of the natural length. From this circumstance it is common to round them after the disease has appeared; but this frequently fails of curing them, unless the part taken off extends considerably beyond the surface of the ulcerated slit. It is common also to burn out the ulcer either with the actual cautery, or with some caustic substance; but this likewise proves an uncertain cure.

Where over-feeding and the want of exercise are supposed to be the chief cause of the complaint, the same rules must be attended to as are mentioned for the internal canker. In other cases, however, an external application will be found sufficient. Take,

Nitrated quicksilver, -	2 drachms.
Turner's cerate, - -	2 drachms.
Lard, - - - -	2 ounces.

To be mixed well, and applied once a day, carefully securing the ear.

Or,

Corrosive sublimate, finely powdered, - - - -	3 grains.
Turner's cerate, - -	1 drachm.
Milk of sulphur, - -	1 scruple.

In some cases the following wash has been efficacious:

Corrosive sublimate, -	5 grains.
Rose water, - - -	1½ ounce.

9. Inflammation of the Bowels.

This is frequently accompanied with rheumatic pains, in which case the dog is seized with a total loss of the use of his hind-legs; his back about the loins, appears tender and painful to the touch; he screams on being moved; and is often inclined to costiveness, but always to pain.

The spring, on account of the easterly winds, produces more instances of this disease than any other time of the year. The treatment should be as follows: the animal should be placed in warm water, and kept there for a quarter of an hour, the affected parts being frequently rubbed during the time; when taken out, he should be wiped dry and kept warm. The following should be previously administered:

Tincture of opium, - -	20 drops.
Æther - - - -	30 drops.
Castor oil, - - -	1 ounce.

This is proper for a middle sized dog, but it must be increased or diminished according to size. If this should not operate, try a clyster, and if that fail, give the following:

Calomel, - -	4 grains.
Powdered opium,	a quarter of a grain.
Oil of peppermint,	1 drop.
Aloes, - -	1 drachm.

Make into a ball, and increase or diminish according to size. If necessary, repeat every four hours till the bowels are perfectly open, in which state they must be moderately kept for three or four days.

The affected parts should also be rubbed two or three times a day with the following:

Oil of turpentine, - -	2 ounces.
Spirit of hartshorn, - -	2 ounces.
Laudanum, - - -	2 drachms.
Sweet oil, - - -	2 ounces.

The warm bath should be repeated at intervals of one or two days, according to the quickness or slowness of the amendment. Moderate feeding should be allowed; sometimes the animal refuses food, at other times he is willing to eat, and often voraciously.

Mercurial frictions and blisters on the spine have frequently a good effect.

When inflammation proceeds from costiveness, the dog appears dull and dislikes to move; his belly is also hot and sore. The costiveness is sometimes complete, and at others a few drops of fæces are strained out, by which an ordinary observer may think the dog is purged instead of being bound.

Clysters should be constantly applied; medicines are also necessary. A large dose of castor oil may be at first tried, which, if not effective, must give place to stronger means: viz.

Calomel, - - - -	6 grains.
Aloes, - - - -	1½ drachm.

To be diminished or increased according to size. If the stomach reject the first dose, add half a quarter of a grain of opium to the second, or a dose of Epsom salts. To be repeated every four hours, but with decreased strength.

If the inflammation originates from a cold, the dog betrays great heat, thirst, panting, and restlessness, even from the first attack. The stomach is incessantly sick, throws up, and all food is rejected. The belly is extremely hot, the eyes red, and the mouth and nose first hot and then cold. The animal frequently lies on his stomach, and expresses much distress. The cure, in this case, is early and liberal bleeding; and clysters of castor oil, with mutton broth, should be frequently applied till successful. Rubbing the belly with oil of turpentine has often a good effect.

When the inflammation is of a bilious kind, the dog vomits a black or yellow fœtid matter. If the evacuation be trifling, a mild mercurial aperient should be administered: viz.

Calomel, - - -	10 grains.
Aloes, - - - -	2 drachms.

Make into four, six, or eight balls, according to size, and give one every four or five hours till successful. Clysters of mutton broth may be given, and some should be forced down the throat if the sickness be very obstinate. If the belly be hot and stretched, the warm bath or fomentations will be necessary.

When the evacuations are bloody, no laxatives should be used; but the following administered:

Powdered colombo, - -	1 drachm.
Powdered chalk, - -	1 drachm.
Powdered gum-arabic, -	1 drachm.
Powdered opium, - -	1 grain.

Mix and divide into three, five, or seven balls, according to the size of the dog, and give one every three or four hours. If the case be desperate, give also a starch clyster.

10. INFLAMMATION OF THE BLADDER.

This complaint is indicated by great restlessness and panting; in some instances, there is a total stoppage of urine, when the belly is hot, swelled, and very tender; and, in others, it is evacuated by frequent drops, tinged with blood.

The dog so affected should be liberally bled, and have opening medicines. James's powder, or small repeated doses of tartar emetic, should be administered. Clysters and the warm bath are also necessary; when the latter is not convenient, warm fomentations may answer the purpose.

12. INFLAMMATION OF THE LUNGS.

This disorder is accompanied by a quick, though laborious, breathing, and a rapid, though oppressed, beating of the heart, the following powder should be administered:

Powdered foxglove, -	12 grains.
Tartar emetic, - - -	3 grains.
Nitre, - - - -	1 drachm.

Mix and divide into six, nine, or twelve powders, and give one every two or three hours.

12. COUGHS.

When a young dog coughs much, shivers, is dull, and wastes, though he may eat as usual, it is exceedingly probable that he is breeding the distemper, and the mode of treatment should be accordingly.

Sometimes a young full-grown dog has a short occasional cough, which may likewise produce nausea, with the accompaniment of staring hair and disagreeable breath. This kind arises usually from worms.

A cough, arising from a common cold, may be distinguished from any other by its particular shortness and frequency, though resembling the cough of the distemper. If considerable, bleeding will be proper; after which, an emetic of one, two, or three grains of emetic tartar (according to the size of the dog) may be given; if this be not convenient, a teaspoonful to a dessert-spoonful of common salt will answer the purpose.

13. ASTHMA.

This disorder generally proceeds from confinement and over-feeding. The best cure is a diminution of food, regular purgatives twice a week, or emetics twice a week. In the intermediate days, should emetics be used, give—

Calomel, - - -	half a grain,
Nitre, - - - -	5 grains.
Cream of tartar, - -	10 grains.
James's powder, - -	2 grains.

To be well mixed, and given either as a powder or made into a ball with honey; the dose should be repeated every morning, and, in very bad cases, every evening: the quantity to be augmented or diminished according to the size of the dog. If the calomel be too disagreeable, the following may be substituted:

Nitre, - -	3 grains.
Tartar emetic, -	one quarter of a grain.
Powdered foxglove,	half a grain.

To be mixed and given as the other, but not when the emetic is administered.

14. DROPSY.

This disorder often proceeds from a diseased liver, or a neglected mange. It is not uncommon, and usually proves fatal. The best remedies are diuretics, of which foxglove is the best. Tapping may also tend to prolong life, but in few instances to preserve it.

15. PILES.

Piles are brought on by confinement, heat, and heating food, and show themselves by a red sore protruded anus, which the dog considerably aggravates by dragging it on the ground. They are also produced by costiveness.

The habitual piles will be greatly relieved by the use of the following ointment:

Sugar of lead, - -	6 grains.
Tar, - - - -	half a drachm.
Elder ointment or lard,	3 drachms.

Mix, and anoint the affected part with it two or three times a day.

16. SWELLING IN THE THROAT.

This is a very common and troublesome complaint among small dogs. The following remedies will seldom fail to effect a cure:

Fresh mutton suet, - -	2 pounds.
Gum elemi, - - -	1 pound.
Common turpentine -	10 ounces.

The gum and suet to be melted and strained, and the turpentine to be added while hot. Anoint the affected part with it.

Or, wash the swelling with salt and vinegar mixed, but not too strong, and then anoint it with oil of camomile.

17. SORE EARS.

A dog's ears may become scabby by being torn in the hedges, or otherwise. In this case, anoint them with oil of bitter almonds, which will be sufficient. If they be sore within, mix with it tar and lard.

18. SORE FEET.

Sore feet are cured with brine, or salt and vinegar; a handful of salt to a pint of vinegar. Stale urine is also used for this purpose.

A plaster of black pitch is the best cure for a thorn, in man, horse, or dog: this has been successful when other applications have failed. If the part be much inflamed, a common poultice bound over the plaster will assist the cure.

Some have recommended to bathe the sore feet with greasy pot-liquor, milk, or butter-milk.

When the feet become sore from any diseased affection of the claws, an ointment composed of nitrated quicksilver and Turner's cerate will be proper.

19. SCALDS.

If a dog by accident receive a scald, his own tongue will prove the most salutary wash, and by frequently licking himself he will speedily remove the irritation. It often happens, however, that the scalded part will become bald: in order, therefore, to bring the hair again, calcine a piece of leather, and mix it with lard, and rub the affected part with this ointment.

20. WOUNDS.

Dogs are liable to be wounded in various ways, and these wounds are not in general much attended to, from an opinion that the animal's tongue is the best dressing. Nature is, in many instances, a sure physician, and there is no doubt that the animal's licking a sore is of great service; but in some cases nature may be assisted by art, and in others the tongue may be an injurious application. If a dog be inclined to foulness, a wound licked by a foul tongue will become mangy, and the soreness will consequently spread.

Should a dog be bitten by one that is mad, first carefully wash the wound with warm water, and, immediately after, wash the dog all over. The bitten part itself should then be cauterized, either with the actual cautery, or with lunar caustic. Should the wound be an extensive one, or much lacerated, the lunar caustic will prove the safest application, and by far the most convenient.

The wounds arising from common bites, in general, soon heal of themselves: if, however, they are very extensive, wash them with Friar's balsam to prevent them from becoming gangrenous. The parts may be rubbed with Friar's balsam, oil of organum, and soap liniment.

When a dog is wounded with shot, the following remedies will be found efficacious.

Oil of turpentine,	2 ounces.
Oil of camomile,	2 ounces.
Aqua vitæ,	2 ounces.

To be mixed well together with half a pint of linseed oil.

Or, fresh goose-grease, melted and strained through a sieve, and spirit of wine and turpentine, of each an equal quantity, melted and strained again clear and fine; the part to be well anointed.

When wounded with stakes, or when a violent effusion of blood is to be stopped, the hair should be cut off about the wound, and the part washed with warm vinegar, and then rubbed gently with the following mixture:

Oil of spike,	2 ounces.
Oil of swallows,	2 ounces.

Let the animal be muzzled when it is applied.

21. Sprains.

For sprains in the shoulder, or any part except the legs and feet, the following will be found an efficacious wash:

Spirit of wine,	2 ounces.
Turpentine,	1 ounce.

To be mixed well together in a strong potion of Vegeto's mineral water, and to be applied before the fire.

For sprains in the legs and feet, take—

Spirit of wine,	-	-	-	1½ pint.
Camphor,	-	-	-	3 ounces.
Laudanum,	-	-	-	60 drops.

To be well mixed, and carefully rubbed in eight or ten times a day before a fire.

22. FRACTURES.

Dogs are very liable to fractures from being run over by coaches, carts, &c. or being kicked or trod upon. The thigh is a very common subject of fracture: and though it appears a most serious bone to break, yet it is one that, with a little assistance, commonly unites straight, and forms a good limb. When an accident has happened to the thigh, in case the fracture has injured the fleshy parts also, so as to produce heat and inflammation, foment with vinegar and water till the swelling is reduced. This being effected, apply a plaster of pitch, or other adhesive matter, spread on moderately firm leather, sufficiently large to cover the outside of the thigh, and to double a little over the inside of it also: then fasten a long board upon this, which should reach from the toes to an inch or two, which will keep the limb steady. This lath must be kept in its situation by a long bandage, carefully wound round the limb, and secured by cord.

Fractures of other limbs should be treated in a similar manner, great care being taken not to tighten the broken limb by either the plaster or bandage, else mortification will ensue. Nature does much in these cases, and renders such accidents easier of cure in dogs than in most other animals.

23. POISONS.

In cases of poison, remedies must be administered with speed, in order to be efficacious. When suspected to be injured by arsenic, or mercurial poison, the following emetic should be given, notwithstanding the stomach be already agitated with vomiting:

Ipecacuanha, - - -	2 scruples.
Liver of sulphur, - -	2 scruples.

To be increased or diminished according to circumstances. If the vomiting has been very long and violent, give only the liver of sulphur, dissolved in boiled milk, and repeat it every hour or two; give some also as a clyster in milk. When the stomach seems a little appeased, give laudanum and castor oil.

When injured by licking paint, give active purgations of calomel, in doses from four to eight grains, with a moderate proportion of aloes, and repeat it every six or eight hours till successful. Then administer mild doses of castor oil, and feed very lightly.

Any thing that will cause instantaneous vomiting may have the desired effect in every case. Great benefit has been derived from two or three grains of vitriol, or common salt, forced down the throat. After vomiting, a table-spoonful of oil of English pitch may be given in the morning fasting, as an aperient.

24. DISEASES OF THE EYE.

When the eyes of dogs are affected in consequence of the distemper, they will get well when the primary complaint is removed. A seton in the neck, with goulard or vitriolic washes, will accelerate the cure.

Sometimes the eyes become suddenly weak, water much, and if viewed in the light, look red at the bottom, and also within the eyelids. There are always marks of pain and impatience whenever exposed to a strong light. The animal should be immediately bled; then a seton should be inserted in the neck, and a purgative given every third day. For the first few days adopt a poppy-head fomentation, and frequently use the following wash;

Sugar of lead, - -	half a drachm.
Rose water, - -	6 ounces.

When the inflammation is somewhat moderated, add to this wash—

White vitriol, - - -	10 grains.

In violent injuries of the eyes, through blows, punctures of thorns, or scratches from cats, the above wash may be used till the inflammation has abated. Should a bluish dimness be afterwards left over the eyes, a small pinch of a powder may be sprinkled into the eye once or twice a day, composed of—

Sugar of lead, - - -	1 scruple.
Calomel, - - - -	1 drachm.

Cataract is another disease to which the eyes of dogs are liable. In the old they are very common through the decay of nature; and young dogs are liable to it, it being sometimes produced by an injury. When this disease attacks an aged dog, both eyes are generally affected; but in a young dog it is usually confined to one. Let white vitriol, the size of a pea, be put into half a pint of spring water, and remain in it for a day; then soak a bit of fine linen in the water, and bathe the affected eye or eyes with it; immediately after, bathe them with pure spring water. This should be done twice a day.

25. VENOMOUS BITES.

On this subject, Mr. Beckford observes, 'Hounds sometimes are bitten by vipers—sweet-oil has been long esteemed as a certain antidote; some should be applied to the part and some taken inwardly; though a friend of mine informs me that the common cheese rennet, externally applied, is a more efficacious remedy than oil for the bite of a viper,'

26. RICKETS.

Puppies are very liable to rickets, particularly pugs and small terriers. These is a breed of large terriers in whom this deformity is hereditary: these are called wry-legged, and are much used for hunting rabbits, &c. The affection attacks all the joints of the extremities, which it enlarges, and also makes the limbs crooked. Cleanliness, good air, free exercise, and wholesome food, will commonly prevent it, and will also amend it in those already affected.

27. FLEAS AND TICKS.

These insects are exceedingly troublesome to dogs. Common soap and warm water made into a strong lather, and left on the dog for a day, will remove them for a time. To be repeated when the inconveniency recurs.

Also sweet oil, or four ounces of shag tobacco steeped in three quarts of water; to be well rubbed in before the fire.

Also, Scotch snuff, or trooper's ointment, rubbed all over him. In hot weather, and if the dog have much hair (the case with setters and springers), it will be necessary to repeat the dressing very often.

28. Pupping.

Bitches often lose their lives in pupping. When the labour is protracted, the puppies die, and come away piecemeal some days afterwards. A bitch should never be allowed to suckle more puppies than her powers are equal to; and if she have a fit, the puppies should be removed; one or two may be given to her for half an hour, morning and evening; or, if she hath much milk, one may be left with her entirely. The following mixture is necessary:

Æther, - - - -	1 drachm.
Laudanum, - - -	1 drachm.
Strong ale, - - -	2 ounces.

Mix well together, and give a dessert, or two table-spoonfuls, (according to the size) repeating the dose every three or four hours. Nutritious food should be also given to her, and in sufficient quantities.

When you wish to dry up a bitch's milk, (which is often necessary) bathe the teats well several times with warm vinegar, or warm vinegar and brandy.

29. Foul Coats.

If dogs be *foul* in their coats, they never have their scent in perfection. Some sportsmen (and the practice is proper) regularly dress their dogs with sulphur before the hunting season, even though no breaking-out appears. The following method of making a dog fine in the coat has been recommended. Take—

Native sulphur, - -	1 pound.
Train oil, - - -	1 quart.
Oil of turpentine, -	1 pint
Soap, - - - -	half a pound.

Rub well with this four or five times in the course of the summer.

30. GENERAL DESCRIPTION OF THE DOG.

The dog, independent of his beauty, vivacity, strength, and swiftness, has all the interior qualities that can attract the attention and esteem of mankind. Intelligent, humble, and sincere, the sole happiness of his life seems to be to execute his master's commands. Obedient to his owner, and kind to all his friends, to the rest he is indifferent, and declares himself openly against such as appear to be dependent like himself. He knows a beggar by his clothes, his voice or his gestures, and generally forbids his approach with marks of indignation. At night, when the guard of the house is committed to his care, he seems proud of the charge: he continues a watchful sentinel, goes his rounds, scents strangers at a distance, and by barking gives them notice of his being upon duty: if they attempt to break in, he becomes fiercer, threatens, flies at them, and either conquers alone, or alarms those who have more interest in coming to his assistance. The flock and herd are even more obedient to the voice of the dog than to that of the shepherd or herdsman: he conducts them, guards them, and keeps them from capriciously seeking danger: and their enemies he considers as his own. Nor is he less useful in the chase, when the sound of the horn, or the voice of the huntsman, calls him to the field: he testifies his pleasure by every little art, and pursues, with unwearied perseverance, those animals of which, when taken, he never expects to participate.

31. Habits of the Dog.

When a dog is fatigued, he hangs his tongue out of his mouth, but never perspires. When about to lie down, he turns himself round several times, and if uneasy, will rise and alter his position. He sleeps little, and in his sleep seems to hear as acutely as if awake, and he may be frequently heard to whimper when asleep. If his excrements fall on vegetables, they generally destroy them; and the same may be said of his urine, which will cause leather to rot. The dog, however, is very particular in his choice of places, and mostly throws his dung where it can do no injury: thistles, high stones, and the roots of trees, seem to be his favourite resorts for this purpose. Till he is a year old he crouches his hinder parts to eject his urine; but after the age of twelve months, he throws it out sideways, by raising his leg against a wall, tree, &c. and whenever he comes to a place where another dog has ejected, he never fails to do the same: indeed, he seldom or never passes a spot to which he has been accustomed without paying it the usual compliment. A dog soon acquires the knowledge of his name, and will answer to it though it comes from a stranger's mouth.

32. Food.

Though a carnivorous animal, the dog will not eat indiscriminately of every animal substance: he will refuse the bones of a goose, crow, or hawk, as well as the flesh of his own species, which can be cooked in no manner whatever to deceive him. He will feed on most other animal substances, whether fresh or putrid; and will eat fruits, succulent herbs, and bread of all sorts. His digestive powers are so great that he draws nourishment from the hardest bones. He eats very greedily, and, if allowed, will frequently gorge till he is sick, particularly of horse-flesh.

33. VARIETIES OF THE DOG.

'Of all animals,' says a popular writer, 'the dog seems most susceptible of change, and most easily modified by difference of climate, food, and education: not only the figure of his body, but his faculties, habits, and dispositions, vary in a surprising manner; nothing appears constant in them but their internal conformation, which is alike in all; in every other respect they are very dissimilar: they vary in size, in figure, in the length of the nose and shape of the head, in the length and direction of the ears and tail, in the colour, quality, and quantity of the hair, &c. To enumerate the different kinds, or mark the discriminations by which each is distinguished, would be a task as fruitless as it would be impossible; to account for this wonderful variety, or investigate the character of the primitive stock from which they have sprung would be equally vain.' No systematic arrangement can therefore be adopted with confidence; but it will be necessary to notice those kinds most general and most useful to mankind.

35. *The Shepherd's Dog.*

This breed seems to have been the stem from whence all the present numerous branches have sprung. This is a very common dog, with long coarse hair, pricked ears, a long nose; and takes his name from being principally employed in guarding and attending sheep. This breed of dogs, at present, appears to be preserved in the greatest purity in the northern parts of Scotland, where its aid is highly necessary in managing the numerous herds of sheep bred in those extensive wilds.

34. *The Cur-Dog.*

This useful animal in the north is called the *Coally* dog. They are chiefly employed in driving cattle; in which way they are extremely useful. They are larger, stronger, and fiercer than the shepherd's dog; and their hair is smoother and shorter. They are mostly of a black and white colour; their ears are half pricked; and many of them are whelped with short tails, which seem as if they had been cut: these are called *self-tailed dogs.* They bite very keenly; and as they always make their attack at the heels, the cattle have no defence against them; in this way they are more than a match for a bull, which they quickly compel to run. Their sagacity is uncommonly great.

36. *The Mastiff.*

The genuine old English mastiff is rarely to be seen, as the breed has been contaminated by various intermixtures. In its original state the mastiff is far superior in height, size, bone, and strength, to the bull-dog; the ears more pendulous, the countenance commanding, and the eyes fiercely expressive.—Notwithstanding his terrific appearance, and menacing looks to strangers, he is, to his master and friends, as mild in his manners, and as grateful and solicitous of attention, as the most diminutive of the canine race. Their ferocity can always be increased or diminished by the degree of restraint in which they are kept; those constantly chained are more dangerous to approach than those which are accustomed to their liberty. During his nocturnal guard the mastiff gives notice of the least alarm, as it is the peculiar practice of this dog always to bark before he bites.

37. *The Bull-dog.*

This is the fiercest of all the dog kind, and is probably the most courageous creature in the world. It is low in stature, but very strong and muscular. Its nose is short; and the under jaw projects beyond the upper, which gives it a fierce and unpleasing aspect. Its courage in attacking the bull is well known; its fury in seizing, and its invincible obstinacy in maintaining its hold, are truly astonishing. The bull-dog, unlike the mastiff, always bites before he barks; and such is this animal's ferocity and thirst of blood, that when once exasperated by his opponent, or encouraged by his master, no pain or punishment will prevent him from pursuing, and endeavouring to subdue, the object of his resentment.

38. *The Greenland Dog.*

This breed is similar to the Pomeranian, Siberian, Lapland, and Iceland dogs, in the sharpness of their muzzles, in their long shaggy hair, and bushy, curling tails. The principal difference is in their size. Though much larger, they all of them have some resemblance to the shepherd's dog.

Most of the Greenland dogs are white; but some are spotted, and some black. They may rather be said to howl than bark. The Greenlanders sometimes eat their flesh: they make garments of their skins, and use them in drawing sledges, to which they yoke them, four, five, and sometimes six together. The dogs of Kamschatka are commonly black or white. They are strong, nimble, and active, and are very useful in drawing sledges, the only method of travelling in that dreary country during the winter. They travel with great expedition. Captain King relates, that during his stay there, a courier, with dispatches, drawn by them, performed a journey of 270 miles in less than four days.

39. *The Coach Dog.*

This dog is said to have been a native of Dalmatia, a district in European Turkey, bounded on the west by the gulf of Venice, and from whence, it is presumed, the breed was formerly transported to France, England, &c. The sole destination of the Dalmatian is the individual attendance upon, and the protection of, the horses and carriage to which he belongs. He always contributes to the splendour of a stable establishment, and the carriage is never brought into use without his appearance in his official capacity; his attendance upon the horses, when in a state of inactivity, and his exulting consciousness of dignity in preceding the carriage, constitute his whole employ and happiness. This is a pretty spotted animal, and the most inoffensive of the canine race.

40. *The Stag-hound.*

This animal possesses a majestic, dignified, and serene countenance, and is held in high estimation. Naturalists of the first celebrity have considered the hound, harrier, turnspit, water-dog, and spaniel, to have been of the same race, as they differ only in the length of their legs, and size of their ears. The stag-hound, now in use for the pursuit of deer, originated from the fox-hound and the blood-hound. The original stock of blood-hounds exceeded in size, strength, and courage, every other kind of hound in existence: they were seldom brought into the chase, or employed in the sports of the field, but kept entirely for the purposes of detection. When laid on the scent, they were sure to trace out the deer-stealer. They are still used in Cuba, and were lately employed in the Maroon war in Jamaica. Very few of these dogs are now kept in this country.

41. *The Fox-hound.*

Much attention has been paid to the improvement of this breed; and it is the opinion of a celebrated sportsman, that there are necessary points in the shape of a fox-hound, which ought always to be attended to; for if he be not of perfect symmetry, he will neither run fast nor do much work; having a great deal to undergo, he should have strength proportioned to the task: his legs should be straight as arrows: his feet round, and not too large; his shoulders back; his breast rather wide than narrow; his chest deep; his back broad; his head small; his neck thin; his tail thick and bushy, and if he carry it well, so much the better.

From the number of years so emulously employed by sporting amateurs in the improvement of this breed, we may naturally conclude that it has now attained the summit of perfection, and that no country in Europe can boast of fox-hounds equal in strength, agility, and speed, to those of Great Britain.

42. *The Greyhound.*

The greyhound is of a beautiful and delicate formation for speed and majestic attraction, and, under the ancient name of gazehound, formed one of the earliest dogs of the chase. He was the original companion of royalty in the sports of the field; and in lieu of fines and forfeitures to the crown, king John was wont to accept of gazehounds. It is observed by the Rev. W. B. Daniel, that the greyhound in ancient times was considered as a very valuable present, and particularly to the ladies, to whom a compliment, so intrinsically estimated, was singularly acceptable.

The deer, fox, and hare, have each been coursed by greyhounds, according to the fashion of the people, and the custom of the times; the two former are now seldom or never resorted to; but in pursuit of the hare, the energetic velocity of the greyhound still affords delight. In shape, make, and form, it is a beautiful and delicate animal, and is universally allowed to be the fleetest of the canine species.

It is not recorded why or when the name of greyhound was adopted, though it is evidently certain, that gazehound was the original name, in allusion to its running by *sight*, and not by *scent*.

No obstacles whatever can restrain the invincible ardour and determined progress of the greyhound;

its bold velocity in pursuit of game has always been matter of astonishment to the lovers of sport; and, notwithstanding its natural simplicity and peaceable demeanour, it is remarkable for fidelity, sagacity, and courage.

43. *The Beagle.*

Beagles are inferior to harriers in size, although they possess precisely the same properties. They are the smallest of the hound race used in this country, are exquisite in their scent of the hare, and indefatigably vigilant in their pursuit of her; though not equal to the greyhound in speed, they are in perseverance; they follow her through all her windings, and by their scent trace and retrace her footsteps in a wonderful manner.

44. *The Harrier.*

The harrier, which chiefly differs from the beagle in being somewhat larger, is very nimble and vigorous. It pursues the hair with the most impetuous eagerness, and gives her no time to breathe or double. The most eager sportsmen generally find it sufficient exercise to keep in with their speed. They exert their voices with great cheerfulness, and make delightful harmony.

A mixed breed, between this and the large terrier, forms a strong, active, and hardy hound, used in hunting the otter. It is rough, wire haired, thick-quartered, long-eared, and thin-shouldered

45. *The Terrier.*

This animal is supposed to have derived his name from *terra*, the earth, on account of the avidity with which he penetrates into every hole, particularly when in pursuit of his own game, being an implacable enemy to vermin of every kind. He not only torments the fox, martin, badger, wild rabbit, weazel, polecat, and rat, but endeavours to hunt every domestic cat he sees. In addition to this instinctive inveteracy, terriers naturally endeavour to find and pursue game with the same alacrity as those dogs which are more immediately appropriated to the sports of the field. No fox-hunting establishment is ever considered complete without a brace of well-bred terriers in the field: and one is generally larger and stronger than the other; for this evident reason, that in a small earth, where the former cannot enter, the other may. From the moment of throwing into cover with the hounds, the emulation of these little animals is so great, that they are indefatigable in their exertions to be up with, and near to, the busiest of the pack, during their endeavours to find; and when once the game is on foot, and the hounds are at their utmost speed, the terriers are seldom far behind, and the first short check is sure to bring them in. When the fox is supposed to have run to earth, then the terrier becomes useful, by attacking him under ground with the utmost eagerness, and by the baying of one at the other, the ear is soon informed whether the fox lies deep, or near the surface, and those who are employed to dig him out are enabled to act accordingly.

In the selection of terriers, the masters of fox-hounds are particularly nice: size is not so dispensible as strength, but courage must be equal to both. The black, and black tanned, or rough wire-haired pied, are preferred; as those inclining to a reddish colour are sometimes, in the clamour of the chase, or by young sportsmen, mistaken for, and hallooed off, as a fox.

The terrier is not only in high request by the superior classes, on account of his extensive utility, but he is equally esteemed by the lower order, and frequently employed in the vulgar and cruel amusements of badger-hunting and badger-baiting.

46. *The Spanish Pointer.*

This breed is now naturalized in England, and the greatest attention is paid to preserve its purity. This dog is short in the head, broad in the forehead, wide in the nose, expansive in the nostrils, simply solicitous in aspect, heavy in the shoulders, short in the legs, almost circular in the form of the body, square upon the back, strong across the loins, and remarkably so in the hinder-quarters. Like the English pointer, this breed is of various colours, but the brown liver-colour and white are the most predominant. Though exceedingly slow, the Spanish pointer is generally sure, and so indefatigable and minute in his researches, that he seldom misses his game when game is to be found. To the recovery of winged and wounded birds the patient perseverance of this dog is peculiarly adapted; and, for the sport of snipe-shooting alone, they are entitled to the preference of every other.

The pointer is gentle, docile, and timid, and remarkable for the facility with which he receives instruction. There are good of all colours, but some prefer the white and the liver-brown. A white pointer is less subject to disease than others, which arises from the predominacy of phlegm in his constitution; his temper is good; he has an excellent nose, is a curious hunter, full of stratagems and cunning, and may be seen at a great distance. A brown or liver-coloured pointer is not so easily seen at a distance, particularly on a mountain; notwithstanding, he will bring his master nearer to the game, and is particularly useful when it does not lie well; which arises from its colour approximating more nearly that of stubbles, &c. among which he hunts, and thereby rendering himself a less distinguishable object to the birds. A lemon or red-coloured pointer is generally of a giddy and impatient nature: cholar being his most predominant humour.

47. *The Setter.*

This species of pointer has attained a considerable degree of estimation and celebrity. The setting-dog is remarkably hardy, active and handsome. Its scent is exquisite, and it ranges with great speed and wonderful perseverance. Its sagacity in discovering the different kinds of game, and its caution in approaching them are truly astonishing. Its feet are much better defended against the sharp cutting of the heath than those of the pointer, by the quantity of hair growing between the toes and round the ball of the foot, of which the pointer is nearly destitute.

Though the setting-dog is in general used for the purpose of taking partridges with a draw-net, yet they are occasionally employed with the gun, and are equally applicable to that appropriation, except in turnips, standing clover, French wheat, furze, ling, or other covert, where their sudden drop and point may not be so readily observed.

48. *The Springer.*

The true English springer differs but little in figure from the setter, except in size; varying only in a small degree, if any, from a red, yellow or liver colour, or white, which seems to be the invariable external standard of this breed; and being nearly two fifths less in height and strength than the setter, delicately formed, ears long, soft, and pliable, coat waving and silky, eyes and nose red or black, the tail somewhat bushy and pendulous, and always in motion when actively employed.

The *cocker*, though of the same race, is smaller than the springer. It has also a shorter and more compact form, a rounder head, shorter nose, ears long (and the longer the more admired), the limbs short and strong, the coat more inclined to curl than the springer's, and longer, particularly on the tail, which is generally truncated: the colour, liver and white, red, red and white, black and white, all liver colour, and not unfrequently black, with tanned legs and muzzle. The *cocker* is so called from being adapted to covert or woodcock shooting.

49. *The Water-spaniel.*

This animal is held in high estimation, 'Some think,' says a late writer, 'that the black are the best and hardiest; the spotted, or pied, the quickest of scent; and the liver-coloured the most rapid in swimming and the most eager in pursuit: these, however, may be fantastic suppositions. Good and bad of all colours are to be found; therefore colour is a mere matter of taste. The body should not be too large, nor the frame too heavy; the head should be round, the ears long, broad, soft, and pendulous, the eyes prominent and lively, the neck short and thick, the shoulders broad, legs straight, chine square, buttocks round and firm, thighs muscular, pastern-joints strong and dew-clawed, fore-feet long and round, and the hair long and naturally curled.'

50. *The Water-dog.*

This breed of dogs are of different colours, but of the same shape and formation. The jet-black, with white feet, stand the highest in estimation. The head is rather round, the nose short, the ears long, broad, and pendulous; the eyes full and lively; the neck thick and short; the shoulders broad; the legs straight, the hind-quarters round and firm; the pasterns strong and dew-clawed; and the fore-feet long, but round; with the hair in natural short curls. This breed, crossed with the Newfoundland dog, has produced a handsome, strong, and valuable kind.

The *pug-dog*, *comforter*, *turnspit*, and some other kinds of the canine species, do not merit a particular description.

51. THE KENNEL.

On this subject we think it best to give the directions and remarks of that skilful sportsman, Mr. Beckford.

'Cleanliness,' says he, 'is not only absolutely necessary to the nose of the hound, but also to the preservation of his health. Dogs are naturally clean animals; they seldom, when they can help it, dung where they lie; air and fresh straw are necessary to keep them healthy. They are subject to the mange; a disorder to which poverty and nastiness do very much contribute. *This*, though easily stopped at its first appearance, if suffered to continue long, greatly lessens the power of the animal; and the remedies which must then be used, being in themselves violent, often injure his constitution; it had better be prevented. Let the kennel, therefore, be your particular care.

> "Upon some little eminence erect,
> And fronting to the ruddy dawn; its courts
> On either hand wide op'ning, to receive
> The sun's all-cheering beams, when mild he shines,
> And gilds the mountain tops."

'Such, as Somerville directs, may be the situation; its size must be suited to the number of its inhabitants: the architecture of it may be conformable to your own taste.'

After pointing out the necessity of the master overlooking the kennel, he proceeds. 'Two kennels are absolutely necessary to the well-being of the hounds: when there is but one, it is seldom sweet; and when cleaned out, the hounds, particularly in winter, suffer both whilst it is cleaning, and as long as it remains wet afterwards. To be more clearly understood, I shall call one of these the *hunting-kennel*, by which I mean that kennel into which the hounds are drafted which are to hunt the next day. Used always to the same kennel, they will be drafted with little trouble; they will answer to their names more readily, and you may count your hounds into the kennel with as much ease as a shepherd counts his sheep out of the fold.

'When the feeder first comes to the kennel in a morning, he should let out the hounds into the outer court; at the same time opening the door of the hunting-kennel, lest want of rest, or bad weather, should incline them to go into it. The lodging-room should then be cleaned out, the doors and windows of it opened, the litter shaken up, and the whole kennel made sweet and clean before the hounds return to it again. The great court and the other kennels are not less to be attended to, nor should any omission that is hurtful to the hounds be passed over in silence.

'The floor of each lodging-room should be bricked, and sloped on both sides, to run to the centre, with a gutter left to carry off the water, that when they are washed they may be soon dry. If water should stand through any fault in the floor, it should be carefully mopped up, for as warmth is in the greatest degree necessary to hounds after work, so damps are equally prejudicial.'

It will be sometimes necessary for the master to see that his work is done; and equally necessary to be able to give his directions. 'Orders given without skill are seldom well obeyed, and where the master is either ignorant or inattentive, the servant will be idle.'

'Contrary to the usual practice in building kennels, there should be three doors: two in the front, and one in the back; the last to have a lattice-window in it, with a wooden shutter, which is constantly to be kept close when the hounds are in, except in summer, when it should be left open all the day. This door answers two very necessary purposes; it gives an opportunity of carrying out the straw when the lodging-room is cleaned, and as it is opposite to the window, will be the means to let in a thorough air, which will greatly contribute to the keeping of it sweet and wholesome. The other doors will be of use in drying the room, when the hounds are out; and as one is to be kept shut, and the other hooked back (allowing just room for a dog to pass), they are not liable to any objection. The great window in the centre should have a folding shutter; half or the whole of which may be shut at nights, according to the weather; and the kennels by that means may be kept warm or cool.'

The two lodging rooms here described are at the opposite sides of the building; in the centre of which are the boiling-house and feeding-yard: and on each side a lesser kennel, either for hounds that are drafted off, hounds that are sick or lame, or for any other purposes, as occasion may require; at the back of which, as they are but half the depth of the two great kennels, are places for coals, &c. for the use of the kennel. There is also a small building in the rear for hot bitches. The floors of the inner courts, like to those of the lodging-rooms, are bricked, and sloped to run to the centre; and a channel of water brought in by a leaden pipe, runs through the middle of them. In the centre of each court is a well, large enough to dip a bucket to clean the kennels, this must be faced with stone, or it will be often out of repair. In the feeding-yard there should be a wooden cover.

The benches, which must be open to let the urine through, should have hinges and hooks in the wall, that they may fold up for the greater convenience of washing out the kennel; and they should be made as low as possible, that a tired hound may have no difficulty in jumping up: be it also observed that the boiler should be of cast-iron, The rest of the kennel should consist of a large court in front, which should be also bricked, having a grass court adjoining, and a little brook running through the middle of it. The earth taken out of Mr. Beckford's was thrown up into a mount, where the hounds in summer used to sit. This court was planted round with trees, and had besides a lime-tree and some horse-chesnut-trees near the middle of it, for the sake of shade. A high pale inclosed the whole. The grass-court was pitched near the pale, to prevent the hounds from scratching out. The posts in the courts were for the conveniency of the hounds. This is done to save the trees, to which the urinary salts are prejudicial. If they are at first backward in coming to them, bind some straw round the bottom, and rub it with galbanum.

At the back of the kennel should be a house, thatched and furzed up on the sides, big enough to contain at least a load of straw. Here should be a pit ready to receive the dung, and a gallows for the flesh. The gallows should have a thatched roof, and a circular board at the posts of it, to prevent vermin from climbing up. A little hay-rick in the grass-yard is of use to keep the hounds clean and fine in their coats; they will be found frequently rubbing themselves against it; the shade of it also is useful to them in summer. If ticks at any time be troublesome in the kennel, let the walls of it be well washed; if they still remain, the walls should then be white-washed.

In summer, one of the kennels should be appropriated to the use of the young hounds. If the hounds are very quarrelsome, the feeder may sleep in a cot, in the kennel adjoining; and, if well chastised at the first quarrel, his voice will be sufficient to settle all their differences afterwards.

52. FEEDING DOGS.

Dogs should neither be badly fed nor over-fed. A mixture of vegetable and animal food is the best. In some kennels meal and milk are constantly given, and dogs will thrive on this diet during the season they do not hunt; but, when their exertions are required, this food will not be sufficiently nutritious. All the meals are used for this purpose, but wheat-meal is the most preferable, when it can be procured, it being the least likely to produce a heated skin: barley-meal, and oat-meal are most frequently given, and are sufficiently nutritious when mixed with either milk or broth; but when constantly used, they may be productive of the mange. Potatoes, without meal, will be a wholesome food for dogs which are not exercised, and are sufficiently nutritious when mixed with milk or butter-milk. When it is most convenient to feed them on potatoes, and the food is not sufficiently relished, let them be mixed with greaves, or other fatty matter, and they will then be greedily swallowed.

Horse flesh is a strong nutritious food for dogs who undergo great exercise, but it should not be given continually, or in great quantities. Animal food should never be given to a dog more than once a day, as he digests his food very slowly, a full meal of flesh not being digested in less than twenty-four hours. If full fed with meat, once a day will be sufficient, except the allowance per day be divided, and which will be more salutary, as a dog swallows his victuals very greedily. Hard-worked dogs, as soon as fed, should be shut up, to encourage sleep, for digestion is promotion more by sleeping than by waking.

The broth in which salted meat has been boiled should never be given to dogs. Parsnips, carrots, and cabbages are not nourishing; but dogs will live on such vegetables. Damaged ship-biscuit, soaked in broth or milk, is very good. Boiled tripe is excellent, particularly when cut small and mixed with the broth and bread raspings. Dogs are very fond of the entrails of chickens. All bones except fish-bones are beneficial, by their action on these animal's stomachs.

53. Breeding Hounds.

In breeding hounds, it is absolutely necessary to consider the size, shape, colour, constitution, and natural disposition of the dog you breed from; as well as the fineness of his nose, his stoutness, and method of hunting. On no account breed from one that is not *stout*, that is not *tender-nosed*, or that is a *skirter*. It is the judicious cross that makes the complete pack. The faults and imperfections in one breed may be rectified in another. Never put an old dog to an old bitch. Be careful that they are healthy which you breed from; or you are not likely to have a healthy offspring. Should a favourite dog skirt a little, put him to a thorough line-hunting bitch, and such a cross may succeed.

Give particular orders to your feeder, to watch over the bitches with a cautious eye, and separate such as are going to be proud, before it is too late. The advances they make frequently portend mischief as well as love; and if not prevented in time, will not fail to set the whole kennel together by the ears, and may occasion the death of your best dogs.

54. Coupling young Hounds.

After the young hounds have been rounded, and are well reconciled to the kennel, know the huntsman, and begin to know their names, they should be put into couples, and walked out amongst the sheep.

If any are particularly snappish and troublesome you should leave the couples loose about their necks in the kennel, till you find they are more reconciled to them. If any are more stubborn than the rest, you should couple them to old hounds, rather than to young ones; and you should not couple *two dogs* together when you can avoid it. 'Young hounds,' says Mr. Beckford, 'are awkward at first; I should therefore advise you to send out a few only at a time with your people on foot; they will soon afterwards become handy enough to follow a horse, and care should be taken that the couples be not too loose, least they should slip their necks out of the collar, and give trouble in the catching of them again.

'When they have been walked often in this manner amongst the sheep, you may then uncouple a few at a time, and begin to chastise such as offer to run after them; but you will soon find that the cry of *ware sheep*, will stop them sufficiently without the whip; and the less this is used, the better. With proper care and attention, you will soon make them ashamed of it; but if once suffered to taste the blood, you may find it difficult to reclaim them afterwards.'

It may be prudent, when young hounds first begin to hunt, to put light collars on them. Young hounds may easily get out of their knowledge; and shy ones, after they have been much beaten, may not choose to return home. Collars, in that case, may prevent their being lost.

Good sportsmen recommend entering dogs at their own game. Much unnecessary cruelty is practised in this case. Mr. Beckford says, I know an old sportsman, a clergyman, who enters his young hounds first at a cat, which he drags along the ground for a mile or two, at the end of which he turns out a badger, first taking care to break his teeth; he takes out about two couple of old hounds along with the young ones, to hold them on. He never enters his young hounds but at vermin; for he says, "train up a child in the way he should go, and when he is old he will not depart from it."'

The writer alluded to judiciously remarks, that, 'Hounds, at their first entering cannot be encouraged too much. When they are become handy, love a scent, and begin to know what is *right*, it will be soon enough to chastise them for doing *wrong;* in which case one severe beating will save a deal of trouble. You should recommend to your whipper-in, when he flogs a hound, to make use of his voice as well as his whip, and let him remember, that the smack of the whip is often of as much use as the lash, to one that has felt it. If any are very unsteady, it will not be amiss to send them out by themselves, when the men go out to exercise their horses. If you have hares in plenty, let some be found sitting, and turned out before them, and you will soon find the most riotous will not run after them. If they are to be made steady from deer, they should see them often, and they will not regard them. Flogging hounds in kennel, the frequent practice of most huntsmen, I hold in abhorrence; it is unreasonable, unjust, and cruel; and, carried to the excess we sometimes see it, is a disgrace to humanity. Hounds that are old offenders, that are very riotous, and at the same time very cunning, may be difficult to catch: such hounds may be excepted—they deserve punishment whenever it happens, and you should not fail to give it them *when you can.* This you will allow is a particular case, and necessity may excuse it—but let not the peace and quiet of your kennel be often thus disturbed. When your hounds offend, punish them:—when caught in the act, then let them suffer—and if you are severe, at least be just.'

55. Breaking Dogs for the Gun.

In the training, or breaking of dogs, for the gun, the first thing to be considered is the animal's temper; some requiring severe and frequent correction, others little or none, and some standing in need of encouragement. A dog should not be broken in too young lest he become chest foundered. Some dogs will begin to hunt very early, while others are so long before they take even the smallest notice of game, that many persons have given them away as useless. Let no sportsmen, however, be too hasty in condemning backward dogs, as they frequently prove of first-rate excellence; for those which are difficult to break, turn out the best, when by patience and perseverance they have been brought to hunt, and are become staunch. When brought under proper subjection, at the age of nine months or thereabouts, according as he is strong and healthy, you should take him into the field, with an old staunch dog two or three times, as the latter will give him a notion of ranging and beating his ground. He should be accustomed to obey the whistle, and motion of the hand, in preference to the voice. A pistol or gun should be frequently fired over him, to make him acquainted and familiar with the report; for young dogs are sometimes alarmed at a shot, and should therefore be reconciled to it by practice. He should be made to sit or lie down until the piece be re-loaded, as a dog that breaks away at shot will injure diversion. When first taken into the field he may do as he pleases: he will most likely pursue indiscriminately every thing he sees; but this eagerness will soon abate, and he will content himself with pursuing partridges, &c. As soon as he begins to know his game, the best method will be to let him hunt by himself, for he can be more easily stopped and managed than when he is in company as other dogs may render him too eager and jealous; besides, by continually hunting with an old dog, he will acquire a habit of following him and knowing his superiority, will quietly let him find the game, and never venture to hunt for himself. When he has got the scent, (which is easily learnt by the movement of his tail) he should be allowed to chase his game for a while, particularly if he has been backward in noticing it. To make a dog stop or set is an easy task; and many, in this respect, require little or no teaching. For this purpose he should be accompanied by an old steady dog, and the less noise that is made the steadier he will hunt. If taught to hunt by the motion of the hand, he will regularly look for the signal whenever at a loss; and the voice or whistle should be used as little as possible, for if satisfied with hearing alone, he will seldom ever turn to look at his master. He should never be suffered to break field, that is, to go out of the field before or without his master. If on finding game he spring and chase it, conduct him instantly back to the place from whence he started, and there make him lie down several times.

Blinking is when a dog finds his game, and, on being spoken to, draws off, and runs behind his master: frequently he will do this without being spoken to, and this habit is generally contracted by indiscriminate castigation; severe correction must therefore be avoided, or we may be apt, by endeavouring to break him off one error, to lead him into a worse. When a young dog finds game, his master should never run, but walk slowly up to him; for if he run, the dog will naturally do the same, and certainly spring the birds.

Whenever young dogs *rake*, that is, hunt with the nose close to the ground, which frequently happens, they must be immediately cured of this habit; whenever a dog follows the game by track, he should be called to in an angry tone, which will sometimes have due effect. Partridges lie much better to dogs that wind them than to those that follow by the track. The dog that winds the scent approaches the birds by degrees, and with more or less caution, as he finds them either shy or tame, or as they lie well or ill, which he is enabled to discover by the scent which they emit when they are uneasy: besides, when they see him hunting round him, they are not so much alarmed as they are when they perceive him following them. Birds are always disturbed when they see a dog tracing their steps. When a dog follows them in this manner down wind, he generally springs them; for he is not able to take the scent properly until he is upon them, and then they will not lie. Dogs that carry their heads high will always find the most game.

The art of breaking dogs is simple and easy, and ought to be commenced as early as possible. Puppies of three or four months old may be observed standing at chickens, pigeons, and even sparrows. When a whelp of this description has reached his sixth or seventh month, the process may be proceeded in the following way; and either a single dog, a brace, or more, may be managed with equal ease, in any convenient spot, at the same time, with no other assistance whatever than the alternate expressions of 'To ho!'—'Have a care!'—'Take heed!'—and, 'Hie on!' having a small whip or cane in the hand, to enforce obedience. The commencement of the ceremony consists in throwing a piece of meat or bread at some small distance before the dog, who upon endeavouring to seize it, must be checked by a quick exclamation of, 'Take heed!' &c. to keep him in a patient point of perseverance. When he has stood a sufficient time to demonstrate his obedience to the injunction, then a vibrative low-toned whistle, accompanied with the mild ejaculation of, 'Hie on!' will prove the signal for proceeding, which the whole will quietly learn to obey;

and it will be found by practice, that one or more may at the very moment of approaching the temptation, be as instantly stopped, and recalled by the repetition of a verbal caution,—'Have a care!' &c.

A dog, however, should not be much used until he is a twelvemonth old. They should never be permitted to deviate from the proper rule of quartering the ground. When they have learned their duty, but not before, they may be permitted to enter into company, and to profit by the experience of older dogs.

56. TRAINING SPANIELS.

Spaniel puppies, after weaning and tailing, should be fed often; indeed, until they are three parts of a year old and upwards, at least three times a day. Provided the proper means be used to promote their stamina, their native courage will fully meet the almost incredible fatigue and hardships they will generally have to cope with, and this at times in the most inclement season of the year. For this purpose, they should have milk several times in the week, be allowed clean water to lap, and, if possible, a dry green, to sport and play on by day, with clean straw, but not hay, to lie on at nights. Nor must we omit the precaution, that children be not allowed to play and toy with them, and that they be by no means allowed to bask before the fire. Much self-command and patience as it requires, it is well worth the sportsman's while himself to enter them, and this should be done before they are a twelvemonth old. They should not at first be allowed to range the open field after larks, and every other incitement to the reverses of controul and order. On the contrary, they should be taken directly into cover; and if they range and hunt the same, it is enough. At first they should only be whistled to, nor should they be either chid or encouraged. Kept constantly in good humour, they will soon learn to work before you, and try the ground with regularity; but flagellation, and the sowing the seeds of ill habits at an early age, should be avoided as much as possible. Various are their dispositions, as far as concerns their regard to work at the first onset: some are forward, and others meek; and the howlings of one under flagellation may for ever cow another, whose powers it were possibly worth much pains to elicit.

Being entered, and in some measure shot to, the first season, at the commencement of the next for cover-shooting, they may, with some patience at first, be admitted to regular work. Yet are they inexperienced, inasmuch as they are not aware of the most probable haunts of game, nor do they know how to manage a doubtful scent. In the company of old dogs, however, they improve very fast. At three years old, they become very tolerable finders; at four, get knowing and sagacious in their work; and at five years, they are in the zenith of all their properties and powers, when, taking all countries, and the divers kind of work they have to accomplish, and the fatigue they can endure into consideration, they become the most valuable appendage to the admirers of cover-shooting.

It would be improper to dismiss the subject without noticing a circumstance in the treatment of this sort of dog, productive of the most fatal consequences. With many it is a common practice not to enter spaniels till they are two years old, or the third season from whelping; and then, because they range and hunt in cover, they are of a sudden, forsooth, required to understand and obey commands also. Not so: the instilling this principle so as to act as a constant bias on the conduct of the animal, is the work of time and patience only; the sense of it must be entertained when young, increase with the stature and grow with the growth. Without this implicit obedience to command, you may have many dogs with you, but no one employed as it ought to be: one shall be far a-head, hunting upon her own account, and putting up every thing out of shot; another close behind your heels, with his tail between his legs; a third, sneaking and creeping after you at a more respectful distance; whilst the rest are ranging so wide on either side of you, as to provoke the most patient to the use of execrations, and to oblige him to return home, as he went out, with an empty bag.

Fox-hunting.

Great Britain has always been distinguished for the best horses, the best hounds, and the keenest sportsmen. Fox-hunting has been a favourite sport from time immemorial, as giving most scope for the display of skill and ardour. In Scotland the nobility do not now engage much in this amusement, but in England it is pursued with undiminished enthusiasm. To those not acquainted with this national and manly diversion, it will be extremely difficult to describe it. A celebrated sportsman has, however, lately attempted this task, and he has executed it with uncommon skill and ingenuity. As this description also includes the most essential rules and observations to be attended to in fox-hunting, it will preclude the necessity of enlarging further on the subject.

'The hour in the morning most favourable to the diversion is certainly an early one; nor do I think I can fix it better than to say, the hounds should be at the cover at sun-rising. Let us suppose we are arrived at the cover side.—

> "...... Delightful scene!
> Where all around is gay, men, horses, dogs;
> And in each smiling countenance appears
> Fresh blooming health and universal joy.
>
> *Somerville.*

'Now let your huntsman throw in his hounds as quietly as he can, and let the two whippers-in keep wide of him on either hand, so that a single hound may not escape them; let them be attentive to his halloo, and be ready to encourage or rate as that directs; he will, of course, draw up the wind, for reasons which I shall give in another place. Now if you can keep your brother sportsmen in order, and put any discretion into them, you are in luck; they more frequently do harm than good; if it be possible, persuade those who wish to halloo the fox off, to stand quiet under the cover side, and on no account to halloo him too soon; if they do, he most certainly will turn back again: could you entice them all into the cover, your sport in all probability, will not be the worse for it.

'How well the hounds spread the cover! the huntsman you see is quite deserted, and his horse, which so lately had a crowd at his heels, has not now one attendant left. How steadily they draw! you hear not a single hound yet none are idle. Is not this better than to be subject to continual disappointment, from the eternal babbling of unsteady hounds?

> ". . . . . See! how they range
> Dispers'd, how busily this way and that
> They cross, examining with curious nose
> Each likely haunt. Hark! on the drag I hear
> Their doubtful notes, precluding to a cry
> More nobly full, and swell'd with every mouth."
> *Somerville.*

How musical their tongues!—Now as they get nearer to him, how the chorus fills! Hark! he is found.—Now, where are all your sorrows, and your cares, ye gloomy souls! Or where your pains and aches, ye complaining ones! One halloo has dispelled them all.—What a crash they make! and echo seemingly takes pleasure to repeat the sound. The astonished traveller forsakes his road, lured by its melody; the listening ploughman now stops his plough; and every distant shepherd neglects his flock, and runs to see him break. What joy! what eagerness in every face!

> "How happy art thou, man, when thou'rt no more
> Thyself! when all the pangs that grind thy soul,
> In rapture and in sweet oblivion lost,
> Yield a short interval, and ease from pain!"
> *Somerville.*

Mark how he runs the cover's utmost limits, yet dares not venture forth; the hounds are still too near.—That check is lucky;—now, if our friends head him not, he will soon be off—hark! they halloo: by G—d he's gone.

> ". . . . . . Hark! what loud shouts
> Re-echo thro' the groves! he breaks away:
> Shrill horns proclaim his flight. Each straggling hound
> Strains o'er the lawn to reach the distant pack.
> 'Tis triumph all and joy."

Now huntsman get on with the head hounds; the whipper-in will bring on the others after you: keep an attentive eye on the leading hounds, that should the scent fail them, you may know at least how far they brought it.

'Mind *Galloper*, how he leads them!—It is difficult to distinguish which is first, they run in such a style: yet he is the foremost hound.—The goodness of his nose is not less excellent than his speed:—How he carries the scent! and when he loses it, see how eagerly he flings to recover it again.—There—now he's at head again—see how they top the hedge!——Now, how they mount the hill!——Observe what a head they carry; and show me, if you can, one shuffler or skirter amongst them all: are they not like a parcel of brave fellows, who, when they undertake a thing, determine to share its fatigue and its dangers equally amongst them?

> ". . . . Far o'er the rocky hills we range,
> And dangerous our course; but in the brave

True courage never fails. In vain the stream
In foaming eddies whirls, in vain the ditch
Wide-gaping threatens death. The craggy steep,
Where the poor dizzy shepherd crawls with care,
And clings to every twig, gives us no pain;
But down we sweep, as stoops the falcon bold
To pounce his prey. Then up th' opponent hill,
By the swift motion slung, we mount aloft:
So ships in winter seas now sliding sink
Adown the steepy wave, then toss'd on high
Ride on the billows, and defy the storm."
Somerville.

It *was* then the fox I saw as we came down the hill;—Those crows directed me which way to look, and the sheep ran from him, as he past along. The hounds are now on the very spot, yet the sheep stop them not, for they dash beyond them. Now see with what eagerness they cross the plain.—*Galloper* no longer keeps his place, *Brusher* takes it; see how he flings for the scent, and how impetuously he runs!—How eagerly he took the lead, and how he strives to keep it; yet *Victor* comes up apace.—He reaches him!—See what an excellent race it is between them!—It is doubtful which will reach the cover first.—How equally they run;—how eagerly they strain;—now Victor—Victor!——Ah! Brusher, you are beat; Victor first tops the hedge.—See there! see how they all take it in their strokes! the hedge cracks with their weight, so many jump at once.———

'Now hastes the whipper-in to the other side the cover; he is right, unless he heads the fox.

" Heavens! what melodious strains! how beat our hearts
Big with tumultuous joy! the loaded gales
Breathe harmony; and as the tempest drives
From wood to wood, thro' every dark recess
The forest thunders, and the mountains shake.
Somerville.

Listen!—the hounds have turned. They are now in two parts: The fox has been headed back, and we have changed at last.——

'Now, my lad, mind the huntsman's halloo, and stop to those hounds which he encourages.—He is right;—that, doubtless, is the hunted fox.—Now they are off again."

> "What lengths we pass! where will the wand'ring chase
> Lead us bewilder'd! smooth as swallows skim
> The new-shorn mead, and far more swift we fly.
> See my brave pack; how to the head they press,
> Jostling in close array, then more diffuse
> Obliquely wheel, while from their op'ning mouths
> The vollied thunder breaks.
> . . . . Look back and view
> The strange confusion of the vale below,
> Where sore vexation reigns; . . . . . .
> . . . . Old age laments
> His vigour spent: the tall, plump, brawny youth
> Curses his cumbrous bulk; and envies now
> The short Pygmean race, he whilom kenn'd
> With proud insulting leer. A chosen few
> Alone the sport enjoy, nor droop beneath
> Their pleasing toils."
>
> *Somerville.*

Ha! a check.—Now for a moment's patience.——We press too close upon the hounds.—Huntsman, stand still; as yet, they want you not.—How admirably they spread! how wide they cast! is there a single hound that does not try? if such a one there be, he ne'er shall hunt again. There, *Trueman* is on the scent; he feathers, yet still is doubtful; 'tis right! how readily they join him! See those wide-casting hounds, how they fly forward, to recover the ground they have lost! Mind *Lightning*, how she dashes; and *Mungo*, how he works! Old *Frantic*, too, now pushes forward; she knows, as well as we, the fox is sinking.

> ". . . . . On! yet he flies, nor yields
> To black despair. But one loose more, and all
> His wiles are vain. Hark! thro' yon village now
> The rattling clamour rings. The barns, the cots,
> And leafless elms return the joyous sound.
> Thro' ev'ry homestall, and thro' ev'ry yard,
> His midnight walks, panting, forlorn, he flies;

> . . . . Th' unerring hounds
> With peals of echoing vengeance close pursue."
> *Somerville.*

Huntsman! at fault at last? How far did you bring the scent?—Have the hounds made their own cast?—Now make yours. You see that sheep-dog has been coursing the fox;—get forward with your hounds, and make a wide cast.

'Hark! that halloo is indeed a lucky one.—If we can hold him on, we may yet recover him; for a fox, so much distressed, must stop at last. We now shall see if they will hunt, as well as run; for there is but little scent, and the impending cloud still makes that little less. How they enjoy the scent; see how busy they all are; and how each in his turn prevails.

'Huntsman! be quiet! While the scent was good, you pressed on your hounds; it was well done. Your hounds were afterwards at fault;—you made your cast with judgment, and lost no time. You now must let them hunt;—with such a cold scent as this, you can do no good.—They must do it all themselves.—Lift them now, and not a hound will stop again.—Ha! a high road, at such a time as this, when the tenderest-nosed hound can hardly own the scent!—Another fault! That man at work then has headed back the fox. Huntsman! cast not your hounds now, you see they have over-run the scent; have a little patience, and let them, for once, try back.

'We must now give them time;—see where they bend towards yonder furze brake; I wish he may have stopped there. Mind that old hound, how he dashes o'er the furze; I think he winds him:—now for a fresh *entapis*:—Hark! they halloo:—Aye, there he goes.

'It is near over with him; had the hounds caught view, he must have died. He will hardly reach the cover;—see how they gain upon him at every stroke! It is an admirable race; yet the cover saves him.

'Now be quiet, and he cannot escape us; we have the wind of the hounds, and cannot be better placed;—how short he runs;—he is now in the very strongest part of the cover.—What a crash! every hound is in, and every hound is running for him. That was a quick turn!—Again another!—he's put to his last shifts.—Now *Mischief* is at his heels, and death is not far off.—Ha! they all stop at once:—all silent, and yet no earth is open. Listen!—now they are at him again.——Did you hear that hound catch view? they had over-run the scent, and the fox had lain down behind them. Now, Reynard, look to yourself. How quick they all give their tongues!—Little *Dreadnought*, how he works him! the terriers too, they now are squeaking at him. How close *Vengeance* pursues! how terribly she presses! it is just up with him.——Gods! what a crash they make; the whole wood resounds.—That turn was very short.—There—now;—aye, now they have him.—Who-hoop.'

A very large pack of hounds is very useless and inconvenient. From thirty-five to forty couple are sufficient, as with these the field may be taken three or four times a week. Where foxes are scarce, recourse is sometimes had to bag-foxes; but they are seldom productive of good sport. The scent of them is *different* from that of other foxes; it is *too good*, and makes hounds idle; besides, in the manner in which they generally are turned out, it makes hounds very wild. They seldom fail to know what you are going about before you begin, and if often used to hunt bag-foxes, will become riotous enough to run any thing. A fox that has been confined long in a small place, and carried out many miles, perhaps in a sack, his own ordure hanging about him, must needs stink extravagantly. Add also to this account, that he most probably is weakened for want of his natural food and usual exercise, his spirit broken by despair, and his limbs stiffened by confinement; he then is turned out in open ground, without any point to go to; he runs down the wind, it is true, but he is so much at a loss all the while, that he loses a deal of time in not knowing what to do; while the hounds, who have no occasion to hunt, pursue as closely as if they were tied to him.

Bag-foxes always run down the wind: such sportsmen, therefore, as chuse to turn them out may, at the same time, choose what country they shall run. Foxes that are found do not follow this rule invariably. Strong earths and large covers are great inducements to them, and it is no inconsiderable wind that will keep them from them.

If a fox-court be kept for breeding foxes, it should be every way well secured; and they should be kept very clean, and have plenty of fresh water and good food, such as rabbits and birds. Horse-flesh gives them the mange. If they are bred in the earth, they should be regularly fed, or they will forsake their holes and wander away. Furze covers cannot be too much encouraged. If foxes be bred in an earth which is unsafe, *stink* them out: *that*, or indeed a disturbance at the mouth of the hole, will make the old one carry them off to another place.

HARE-HUNTING.

Hare-hunting is more generally relished than fox-hunting. There are few countries where this sport is not followed. The following excellent directions for this kind of chase are chiefly from the pen of Mr. Beckford.

The hounds most likely to show sport are between the large slow-hunting harrier, and the little fox-beagle: one is too dull, too heavy, and too slow; the other too lively, too light, and too fleet. The first, it is true, have most excellent noses, and will kill their game at last, if the day be long enough; but the days are short in winter, and it is bad hunting in the dark. The others, on the contrary, fling and dash, and are all alive; but every cold blast affects them, and if the country be deep and wet, it is not impossible but some may be drowned.

The huntsman should be quiet, patient, and have infinite perseverance; for a hare should never be given up while it is possible to hunt her: she is sure to stop, and therefore may always be recovered.

The whipper-in must not act without the huntsman's orders. Much noise and rattle is directly contrary to the first principles of hare-hunting, which is to be perfectly quiet, and to let the hounds alone. If they have no one to help them, they have, at the same time, no one to spoil them, which, for this kind of hunting is more material. There is, however, a fault, and which such hounds of necessity must sometimes be guilty of, that is, *running back the heel.* Hounds are naturally fond of scent; if they cannot carry it forward, they will turn, and hunt it back again; hounds that are left to themselves make a fault of this, and it is the only one they commonly have. Though it is certainly best to let the hounds alone, and thereby give as much scope to their natural instinct as possible, yet in this particular instance they should be checked mildly; for, as it is an almost invariable rule in all hunting to make the head good, they should be encouraged to try forward first; which may be done without taking them off their noses, or without the least prejudice to their hunting. If trying forward should not succeed, they may then be suffered to try back again, which they will all be ready enough to do; for they are sensible how far they brought the scent, and where they left it.

Harriers, to be good, like all other hounds, must be kept to their own game. If you run fox with them, you spoil them. Hounds cannot be perfect unless used to one scent, and one style of hunting. Harriers run fox in so different a style from hare, that it is of great disservice to them when they return to hare again. It makes them wild, and teaches them to skirt. The high scent which a fox leaves, the straightness of his running, the eagerness of the pursuit, and the noise that generally accompanies it, all contribute to spoil a harrier.

It is a fault in a pack of harriers to go too fast: a hare is such a little timorous animal, that we cannot help feeling some compassion for, at the very time when we are pursuing her destruction: we should give scope to all her little tricks, nor kill her foully and over-matched. Instinct instructs her to make a good defence, when not unfairly treated; and, as far as her own safety is concerned, she has more cunning than the fox, and makes many shifts to save her life, far beyond all his artifice.

They who like to rise early, have amusement in seeing the hare trailed to her form: it is of great service to hounds: it also shews their goodness to the huntsman more than any other hunting, as it discovers to him those who have the most tender noses.

Mr. Beckford, however, thinks that hare-hunting should be taken as a ride after breakfast. Hare-finders, in this case are necessary: it is agreeable to know where to go for diversion, and not beat about for hours before it is found. It is more material with regard to the second hare than the first, for if the rider be warmed with his gallop, waiting long in the cold afterwards will prove as unwholesome as it will be disagreeable. Whoever does not mind this, had better let his hounds find their own game; they will certainly hunt it with more spirit afterwards, and he will have a pleasure himself in expectation, which no certainty can ever give. Hare-finders make hounds idle; they also make them wild. They are, however, of one great use; they hinder hounds from chopping hares, which they otherwise could not fail to do.

Hares are said to foresee a change of weather, and to seat themselves accordingly. This is, however, certain, that they are seldom found in places much exposed to the wind. In inclosures, they more frequently are found near to a hedge, than in the middle of a field. They who make a profession of hare-finding, (and a very advantageous one it is in some countries) are directed by the wind where to look for their game. With good eyes, and a nice observation, they are enabled to find them in any weather. You may make forms, and hares will sit in them. It is a common practice with the shepherds on the Wiltshire downs; and by making them on the side of hills, they can tell at a distance off whether there are hares in them or not. Without doubt, people frequently do not find hares from not knowing them in their forms.

When the game is found, you cannot be too quiet: the hare is an animal so very timorous, that she is frequently headed back, and your dogs are liable to over-run the scent at every instant: it is best, therefore, to keep a considerable way behind them, that they may have room to turn, as soon as they perceive they have lost the scent; and, if treated in this manner, they will seldom over-run it much. Your hounds, through the whole chase, should be left almost entirely to themselves, nor should they be hallooed too much: when the hare doubles, they should hunt through those doubles; nor is a hare hunted fairly when hunted otherwise. They should follow her every step she takes, as well over greasy fallows as through large flocks of sheep; nor should they ever be cast, but when nothing can be done without it.

. . . . Let all be hushed,
No clamour loud, no frantic joy be heard;

Lest the wild hound run gadding o'er the plain
Untractable, nor hear thy chiding voice.'

The natural eagerness of the hounds will, at such a time as this, frequently carry even the best of them wide of the scent, which too much encouragement, or pressing too close upon them, may continue beyond all possibility of recovery; this should be always guarded against. After a little while, you have less to fear. You may then approach them nearer, and encourage them more; leaving, however, at all times, sufficient room for them to turn, should they over-run the scent. On high roads and dry paths, be always doubtful of the scent, nor give them much encouragement; but when a hit is made on either side, you may halloo as much as you please, nor can you then encourage your hounds too much. A hare generally describes a circle as she runs; larger or less, according to her strength, and the openness of the country. In inclosures, and where there is much cover, the circle is for the most part so small, that it is a constant puzzle to the hounds. They have a gordian knot, in that case, ever to unloose; and though it may afford matter or speculation to the philosopher, it is always contrary to the wishes of the sportsman.

'Huntsman! her gait observe: if in wide rings
She wheel her mazy way, in the same round
Persisting still, she'll foil the beaten track.
But if she fly, and with the fav'ring wind
Urge her bold course, less intricate thy task:
Push on thy pack.'

Besides running the foil, they frequently make doubles, which is going forward, to tread the same steps back again, on purpose to confuse their pursuers; and the same manner in which they make the first double, they generally continue, whether long or short. This information therefore, if properly attended to by the huntsman, may also be of use to him in his casts.

When they make their double on a high road or dry path, and then leave it with a spring, it is often the occasion of a long fault: the spring which a hare makes on these occasions is hardly to be credited, any more than is her ingenuity in making it: both are wonderful.

'. . . . . Let cavillers deny
That brutes have reason: sure, 'tis something more:
'Tis heav'n directs, and stratagems inspire,
Beyond the short extent of human thought.'

She frequently, after running a path a considerable way, will make a double, and then stop till the hounds have passed her; she will then steal away as secretly as she can, and return the same way she came. This is the greatest of all trials for hounds. It is so hot a foil, that in the best packs there are not many hounds that can hunt it: you must follow those hounds that can, and try to hit her off where she breaks her foil, which in all probability she will soon do, as she now flatters herself she is secure. When the scent lies bad in cover, she will sometimes hunt the hounds.

'. . . . . The coverts utmost bound
Slily she skirts; behind them cautious creeps,
And in that very track, so lately stain'd
By all the steaming crowd, seems to pursue
The foe she flies.'

When the hounds are at a check, make your huntsman stand still, nor suffer him to move his horse one way or the other; hounds lean naturally towards the scent, and, if he does not say a word to them, will soon recover it.

In a fine day, good hounds seldom give up the scent at head; if they do, there is generally an obvious reason for it: this observation a huntsman should always make; it will direct his cast. If he be a good one, he will be attentive as he goes, not only to his hounds, nicely observing which have the lead, and the degree of scent they carry, but also to the various circumstances that are continually happening from change of weather and difference of ground. He will also be mindful of the distance which the hare keeps before the hounds, and of her former doubles, and he will remark what point she makes to. All these observations will be of use, should a long fault make his assistance necessary; and if the hare have headed back, he will carefully observe whether she met any thing in her course to turn her, or turned of her own accord. When he casts his hounds, let him begin by making a small circle; if that will not do, then let him try a larger; he afterwards may be at liberty to persevere in any cast he may judge most likely. As a hare generally revisits her old haunts, and returns to the place where she was first found, if the scent be quite gone, and the hounds can no longer hunt, *that* is as likely a cast as any to recover her. Let him remember this in all his casts, that the hounds are not to follow his horse's heels, nor are they to carry their heads high, and noses in the air. At these times they must try for the scent, or they will never find it; and he is either to make his cast slow or quick, as he perceives his hounds try, and as the scent is either good or bad.

Let the huntsman prevent the hounds as much as he can from chopping hares. When hounds are used to it, a hare must be very wild, or very nimble, to escape them. In a furzy country, hounds are apt to chop hares; for it is the nature of those animals either to leap up before the hounds come near them, and *steal away*, as it is called; or else to lie close, till they put their very noses upon them. Hedges also are very dangerous: if the huntsman beat the hedge himself, which is the usual practice, the hounds are always upon the watch, and a hare must have good luck to escape them all. The best way to prevent it, is to have the hedge well beaten at some distance before the hounds.

Hares seldom run so well as when they do not know where they are. They run well in a fog, and generally take a good country. If they set off down the wind, they seldom return; you then cannot push on your hounds too much. When the game is sinking, you will perceive your old hounds get forward; they then will run at head.

'Happy the man, who with unrivall'd speed
Can pass his fellows, and with pleasure view
The struggling pack; how in the rapid course
Alternate they preside, and jostling push
To guide the dubious scent; how giddy youth
Oft babbling errs, by wiser age reprov'd;
How, niggard of his strength, the wise old hound
Hangs in the rear, 'till some important point
Rouse all his diligence, or till the chase
Sinking he finds; then to the head he springs,
With thirst of glory fir'd, and wins the prize.'

Keep no babblers; for though the rest of the pack soon find them out, and do not mind them, yet is is unpleasant to hear their noise; nor are such fit companions for the rest.

Keep no hound that runs false: the loss of one hare is more than such a dog is worth. It is but reasonable to give the hounds a hare sometimes. Mr. Beckford always gave the last they killed, if he thought they deserved her.

It is too much the custom first to ride over a dog, and then cry *ware horse*. Take care not to ride over your hounds; many a good dog has been spoiled by it. In open ground speak to them first; you may afterwards ride over them if you please; but in roads and paths they frequently cannot get out of your way; it surely then is your business either to stop your horse or break the way for them, and the not doing it is absurd and cruel; nor can that man be called a good sportsman, who thus wantonly destroys his own sport. Indeed, good sportsmen seldom ride on the line of the tail hounds.

STAG-HUNTING.

Stag-hunting was for many ages deemed a royal sport. Even his late majesty, king George the Third, was fond of this amusement. Amongst the turbulent noblemen in England and Scotland, the hunting of the stag used often to be a pretext for assembling to devise some grand political scheme.

The greatest inducement to stag-hunting, in preference to any other, is the invariable certainty of a good run; but though a royal sport, it is deemed by many too severe and arduous; it is exceedingly laborious to the horse, and, in a variety of cases, equally so to the rider: difficulties frequently occur which require great exertions in one, and no small share of fortitude in the other.

Hunting, though originally a natural right, became in after ages a privilege claimed by the great, and guarded by the most cruel and arbitrary laws. In the days of Canute, the hunting or coursing a royal stag by a freeman, was punished with the loss of liberty for a year; and if by a bondman, he was outlawed. So severe were the forest-laws introduced by William the Conqueror, that the death of a beast of chase was deemed equally criminal with the murder of a man; and among other punishments for offences against these laws (which were afterwards repealed by Richard I.) were castration, loss of eyes, and cutting off both hands and feet. Queen Elizabeth was rapturously fond of the chase, and frequently followed the hounds, as remarked in Mr. Roland White's letter to Sir Robert Sidney, wherein he observed that, 'her majesty is well and excellently disposed to hunting, for every second day she is on horseback, and enjoys the sport long.'

GROUSE-SHOOTING.

This is a very laborious amusement, and requires great judgment, particularly in such mountains as the sportsman is a stranger to. Several take this diversion on horseback, which of course considerably lessens the fatigue; and, for this purpose, galloways, or ponies, are used; so trained that they will stand still with the bridles on their necks while the sportsman takes aim and shoots. The sportsman should be provided with plenty of dogs: three brace are sufficient, hunting only a brace at a time; and indeed two brace properly managed, may afford plenty of diversion. By allowing the first couple of dogs to hunt only half the day, they will be sufficiently refreshed to hunt the next morning. As the season for this sport is generally the hottest in the year, it becomes necessary to be clothed accordingly. The lighter the dress the better, taking care that the garments next to the skin chiefly consist of flannel: those who have an aversion to flannel may use calico instead.

To walk among the heath in hot weather till a violent perspiration ensues, and then to become stationary for a time, which is sometimes the case in grouse-shooting, will be apt to induce a severe cold if a linen shirt be next to the skin; add to which, the disagreeable sensation it excites by sticking to the back. Short boots, which lace close and are easy to the legs and feet, should be worn instead of shoes. A brandy-flask is a necessary appendage, to the bottom of which a cup should be attached, for the purpose of occasionally mixing water with brandy; for no sportsman, when warm, should, let him be ever so thirsty, drink cold water alone.

Previous to this diversion, it is necessary to consult the barometer, for grouse foresee the change of weather, and shift their ground accordingly. When inclined to rain, they will generally be found about midway on the hills; and when the weather is very bad, the buts of the mountains are the places they frequent; in fine weather they will be found near the tops. These birds go to water immediately after their morning flight, which is the proper time to begin the days diversion; from that time till the extreme heat of the day comes on, good sport may be obtained; also from three o'clock till sun-set. During the dead time of the day, grouse frequently creep into deep roots, and mossy places, to screen themselves from the excessive heat of the sun.

These birds are found in different parts of the world, and are of various kinds; but those of Great Britain are known by the name of red grouse, or moor-game, and are much larger than the partridge, the male weighing about nineteen ounces. The bill is black, the eyes hazel coloured, the throat red, the plumage on the head and neck a light tawny red, every feather being marked with several transverse bars of black; the back and scapulars are a deeper red, and on the middle of every feather is a large black spot; the breast and belly are of a dull purplish-brown colour, crossed with narrow dusky lines; the quill feathers are dusky; the tail consists of sixteen black feathers, the four middlemost barred with red; the thighs are a pale red obscurely barred with black; the legs and feet of the old birds are clothed down to the claws with thick, soft, white and brown feathers; and the outer and inner toes are connected to the first joint by a small membrane. Grouse are called *poalts* till they are a year old. The female weighs about fifteen ounces: her colours, in general, are less vivid, having more of the white and less of the red feathers than the male. They feed on mountain berries and the undertops of heath.

Grouse pair very early in the spring, and the female lays from eight to twelve or thirteen eggs, in a very simple nest, formed on the ground. The young leave the nest about as soon as hatched, and continue to follow the hen till the severity of the winter sets in, when they unite in packs of twenty or thirty brace. The hen is very careful of her brood; if a dog appear, she will throw herself on the ground directly before his nose, screaming dreadfully, and manifesting an apparent incapacity of flying. The dog eagerly pursues, expecting every moment to catch her; but when she has drawn him a sufficient distance from her young, she suddenly extends her wings, and leaves her astonished pursuer to follow her with his eyes.

In grouse-shooting, be careful to give the dogs the wind, and diligently try the sides of the mountains which are most sheltered. If it blow hard, these birds will be found where the heath is longest; in this case grouse generally take long flights, and for the most part down the wind (i. e. not against the wind), what is the very reverse of what most other fowls are known to do. To the disagreeable circumstances attending a high wind, may be added the difficulty of keeping the fowling-piece steady, and the probability of a flash of the pan blowing into the sportsman's face.

On finding a pack of grouse, the old cock is generally the first that makes his appearance, and the first to take wing. If not much disturbed, he will run before the dogs, make a chuckling noise, and frequently get up and challenge without any appearance of apprehension; but by this he warns the hens and poults, who immediately run and separate. The hen generally runs as far as she can from her pursuers, in order to draw their attention from the poults; and if the poults be strong enough to shift for themselves, she will sometimes insure her own safety, and leave them entirely. In this case, good diversion may be expected; the first object should be to kill the old cock, which will very probably lead to the capture of the young ones, one after another; for, in the beginning of the season, they lie very close, particularly after hearing the report of a gun, which terrifies them in such a degree that they become insensible, and may be taken up with the hand under the dog's nose: when this happens, the ground should be carefully beaten. If much rain should have fallen previous to the morning of shooting, grouse will not *lie*, they will erect their heads and run; and the only chance the sportsman has of getting within shot is to run also: but this spoils the dogs, for when they see their master run, they will also do the same.

Grouse are very difficult to be netted, owing to the straggling manner in which they lie, and their habit of scattering on the approach of the sportsman or the least noise. Two or three brace are the most that can be taken at a time in this way, and very seldom so many. Burning heath on the mountains, as it is done chiefly in the spring, is very destructive to grouse, as numerous nests are thereby destroyed. There is an act of parliament against it; but the practice is winked at, on account of the benefit derived therefrom by the owner of the mountain.

As grouse are frequently sent to distant acquaintances after being killed, particularly in hot weather, it is with great difficulty they are kept sweet. Mr. Thornhill recommends the following method of preservation, which he declares to be the best hitherto discovered:—'Never draw your game, particularly grouse; that is, do not follow the usual directions of taking out the entrails when you wish to send them any distance. The best mode is not to pack them till they are perfectly dry. First of all, procure bladders, and put a brace or more in one, if the bladder will contain them: tie the bladder tight round the neck, and seal it with sealing wax, to prevent the air from getting in; and in this state, if put into boxes, they will keep for three weeks if required.' Some put a little heath in the bottom of the box, and wrap the birds separately (without being drawn) in paper.

PARTRIDGE-SHOOTING.

The partridge is a simple, timid bird, and may be easily beguiled; they are often driven into a tunnel-net, by which poachers seldom miss taking a whole covey at once. These birds generally pair about the second week in February; but in a mild season they are found in pairs as early as January: should the weather afterwards prove severe, they again assemble in numbers, or, according to the sporting term, in *packs*. Their nest consists of a few blades of withered grass and leaves, constructed without art, and chiefly found in corn-fields, amongst clover, long grass, or in the bottom of hedges. The female lays from thirteen to twenty eggs, and sometimes more. The egg is about the size of a pigeon's, but more obtuse, and of a greyish colour. The period of incubation is three weeks; and so closely do they sit on their eggs, particularly when near hatching, that instances have frequently occurred of a hen partridge being cut in two by a scythe. The great hatch is about the first ten days in June, and the young birds begin to fly about the end of that month. If a partridge's nest be destroyed, she generally lays again, and this brood, which is termed by sportsmen *clacking*, is not game till October; these birds are always weak, and generally fall victims to the inclemency of the weather.

The brood are able to run as soon as they are hatched, and are, indeed, sometimes seen carrying part of their shell with them. They are immediately led by the cocks and hens to ant-hills, their principal food being, at this time, the eggs of those insects; and such is the excellence of this food, that when properly supplied with it, they seldom fail of arriving at maturity.

The cock partridge weighs about fourteen ounces, and the hen twelve: while young, and their plumage not complete, they may be distinguished from the old ones by the first feather of the wing, which terminates in a point like a lancet; but in those which are not of the last brood, this feather is round in the extremity. The bill of the young bird is also brown, while that of the old one is a blueish white; and the legs of the young are yellow and of the old one grey. When they become (game, or according to the sporting term, *black tails)* the cock in general may be distinguished by the bay feathers on his breast forming a sort of horse-shoe; but this is not a certain rule: the males, after the first or second year, can only be distinguished by a superior brightness of colour about the head.

Partridges are not equally abundant every year, as their number depends much upon the weather. The eggs are frequently chilled; and even when the young ones leave the shell, they are often killed by the severity of the weather. If the months of June and July are fine, these birds are generally abundant.

While the corn is standing, partridges have a ready and safe retreat from most of their numerous enemies, and when they happen to be surprised, will exhibit wonderful instances of instinct in their attachment to their young, and of courage and skill in their defence. If danger approaches their young brood before they are able to fly, both the parents immediately take wing, and the young ones cower down under the nearest shelter, where they remain perfectly motionless; the hen, after having flown two or three hundred yards, lights on the ground, and immediately running along the furrows, soon arrives at the place whence she set out, collects her little family, and withdraws them to a place of safety; the cock, in the mean time, endeavours to engage the attention of the sportsman, by fluttering before him a few yards at a time, as if wounded, and thus draws him in the eagernesss of pursuit, to a sufficient distance from his young; after which, when all danger is over, the call of the female directs him to her retreat. In the absence of the cock, the hen will take this part upon herself. Of this an interesting example is found in White's Naturalist's Calendar.

"A hen partridge came out of a ditch, and ran along, shivering with her wings, and crying out as if wounded, and unable to get from us. While the dam acted this distress, the boy who attended me saw her brood, that was small and unable to fly, run for shelter into an old fox-earth under the bank.'

When the corn is cut, partridges generally resort in the day time to groves and covers, to be out of the reach of birds of prey; but at night the dread of foxes, weazels, and other small wild quadrupeds that haunt these sheltered places, drives them to the open stubble, in the middle of which they nestle together, and spend the hours of darkness.

In partridge shooting, both pointers and setters are used; but in a rough country, or where game is scarce, setters are preferable: in an open country, and where partridges abound, pointers are, perhaps, equal to setters; and two staunch dogs will be found sufficient.

The best time for this amusement is from two hours after sunrise until twelve o'clock, and from half past two or three o'clock until dark. When the weather is very dry, especially at the beginning of the season, and the scent, according to the sporting phrase, *sinks*, the dogs' abilities will be put to the test to no purpose. In the middle of the day, partridges cease to feed or run, and generally place themselves by the side of a bank, to enjoy the heat of the sun. They generally feed and sleep in separate places: but though they often change their ground, sometimes they remain all day, or all night, where they fed the preceding evening or morning. At day break they call, and, when collected, generally take their flight to the stubbles, which, if high and thick enough to afford shelter, will induce them to remain there till disturbed; however, particularly in dry weather, they are frequently found at this time among potatoes. After feeding in the evening, they again call, and fly to the place where they intend to remain for the night. When calling, they seldom lie well for the sportsman to approach within gun-shot.

PHEASANT-SHOOTING.

This is a laborious sport; but before we enter into the merits of the diversion, it will be necessary to make some observations on the game.

The pheasant is a beautiful bird, and derives its name from its native soil, having been brought into Europe from the banks of Phæsis, a river of Colchis in Asia Minor. The iris of the eye is yellow, and the eyes themselves are surrounded with a scarlet colour, sprinkled with small specks of black. On the fore-part of the head are blackish feathers, mixed with a shining purple. The top of the head, and the upper part of the neck, are tinged with a darkish green that shines like silk. In some, the top of the head is a shining blue, and the head itself, as well as the upper part of the neck, appears sometimes blue and sometimes green, as the eye of the spectator may be situated. The feathers of the breast, the shoulders, the middle of the back, and the sides under the wings, have a blackish ground, with edges tinged with a colour which varies like the head and neck, appearing sometimes black and sometimes purple: under the purple is a transverse streak of a gold colour. The tail, from the middle feathers to the root, is above eighteen inches long; the legs, feet, and toes are of the colour of horn: there are black spurs on the legs, shorter than those of the common farm-yard cocks, and a membrane that connects two of the toes together. The female is not near so beautiful as the male, her colours being less brilliant.

This bird, which is so beautiful to the eye, is equally delicious to the taste when served up to table. Its flesh is considered as the greatest dainty; and when the physicians of old spoke of the wholesomeness of any viands, they generally compared them with the nutritious flesh of the pheasant.

These birds do not pair like partridges, the cock being sufficient for a number of hens. They seem, however, occasionally to pair, as the male and female are sometimes observed to stray from the provinces and breed in distant situations. They are much attached to thickets and woods when the grass is very long; they also breed in clover-fields. They form their nests on the ground, much in the manner of the partridge. In a wild state, the hen lays from fifteen to twenty eggs, but when domesticated, seldom more than ten. Their eggs are smaller than those of a domestic hen. In mowing clover near the woods frequented by these birds, the destruction of their eggs is sometimes very great; game-keepers, therefore, should drive them from clover-fields, as soon as they begin to lay, until their haunts are broken, and they retire into the corn, or places more secure. The young ones, like partridges, follow their mother as soon as they have broken the shell, and will remain some time after the corn is cut amongst the stubbles, and in the bottoms of hedges if undisturbed; but, if molested, they seek the covers, whence they issue morning and evening to feed, as long as food is to be found among the stubbles; when corn no longer remains, they feed on acorns and wild berries.

When at liberty, the pheasant hatches and rears her brood with patience, vigilance, and courage; but, when tame, she never sits well, and frequently will not sit at all, so that a domestic hen is generally substituted on such occasions; nor, when in captivity, does she seem to be conscious of the necessity of leading her young to their food, and the brood will quickly perish if left solely to her protection. A spirit of independence seems to attend this bird, which, if left at large, is remarkable for its fecundity. Though taken from its native warm retreat, where the woods supply a variety of food, and the genial sun suits its tender constitution, this bird has evinced an extraordinary attachment to native freedom; and, as if disdaining the protection of man, has left him to take shelter in the remotest forests, and to feed on the scanty produce of a chilling climate. By the owners of parks and manors, great pains are taken for the preservation of this beautiful bird; but notwithstanding every precaution, it will frequently stray from preserved covers—never to return.

In pheasant-shooting, the sportsman should be properly equipped for a cover. Strong woollen cloth gaiters are thought preferable to leather, as in wet weather the latter is very uncomfortable, and the former is a sufficient guard against briars.

If the night previous to the sport be wet, the droppings of the trees will compel the pheasants to quit the woods; and, in this case, the hedge-rows and furze-covers should be diligently tried, as good diversion may be obtained. This bird is much attached to almost all sorts of covers, and especially to the sides of the pit where alder-trees are growing.

The setter is the best dog for this sport; but the use of bells is ridiculous, for as little noise as possible should be made. Pointers are frequently too tender to follow this bird through the brambles, which is not the case with a good setter. In hunting, however, with setters, care must be taken never to let them range out of gun-shot. Many persons use springers, or springing-spaniels, for this diversion, and also for partridge-shooting; but this is not the custom of experienced sportsmen. The small springing spaniel may answer tolerably well in the beginning of the season, or where the birds have not been much disturbed; but he is by no means equal to a setter. The springer is too noisy for this diversion. A pheasant, when found by a setter, instead of going off, will frequently rise into a tree, and challenge, (i. e. make a chuckling noise) which rarely happens when found by the springing spaniel.

As pheasants lie remarkably well in hedge-rows, here a pointer or setter may be equally useful, for sometimes the bush must be shaken before the bird will rise. It is, however, different in covers, when these birds frequently run a considerable distance, and it becomes necessary to encourage the dog to push the pheasant, though, when a little used to the sport, he will need no encouragement. A springer may, perhaps, push a pheasant quicker than a setter; but unless he be trained to a degree of perfection not very common, he will occasion ten times the trouble of the setter, and the birds will be more liable to rise out of gun-shot.

WOODCOCK-SHOOTING.

The woodcock, during summer, is an inhabitant of Norway, Sweden, Lapland, and other northern countries, where it breeds; but when winter approaches, the severe frosts force it southward to milder climates. This bird of passage arrives in Great Britain in flocks; some in October, but not in great numbers till November and December, though they are sometimes seen as early as September. They generally take advantage of the night, as they seldom appear before sunset. The time of their arrival depends much upon the prevailing winds; they are unable to struggle with the boisterous gales of the northern ocean, and therefore wait for a favourable wind. When they have encountered bad weather on their passage, they are sometimes so exhausted on their arrival as to suffer themselves to be seized by the hand. They occasionally take refuge, during very stormy weather, in the rigging of vessels at sea, and numbers are frequently lost in their passage. The greater part of them leave this country about the latter end of February or the beginning of March, always pairing before they set out, and at this time they utter a little piping noise; they retire to the coast, and, if the wind be favourable, set out immediately; but if contrary, they remain for some time, and thus afford good diversion to those sportsmen who reside near the sea. The instant, however, a fair wind springs up, they embrace the opportunity, and where hundreds have appeared on one day, not a single woodcock may be seen on the next.

This bird has a long, slender, straight bill, with which he searches for his food, worms and insects, in moist ground. The nostrils are linear, and lodged in a furrow; the head entirely covered with feathers: and the feet with four toes, the hind one very short, and consisting of several points. The hen may be distinguished from the male by a narrow stripe of white along the lower part of the exterior veil of the outermost feather of the wing. The same part in the outermost feather of the cock is elegantly and regularly spotted with black and reddish white. In the bastard wing of both is a small, pointed, narrow feather, very elastic, and much sought after by painters, as it makes a good pencil. These birds generally weigh from twelve to fourteen ounces.

Woodcocks build their nests on the ground, generally at the root of some tree, and lay four or five eggs, about the size of a pigeon's, of a rusty colour, and marked with brown spots; they are so remarkably tame during incubation, that they may be constantly looked at, and even stroked with the hand. Very few of them remain in England during the summer season; a few, indeed, have occasionally tarried, and the female has been known to make a nest and lay eggs. This may be probably owing to the birds having been wounded by sportsmen in the winter, which has rendered them incapable of taking their long journey in the ensuing spring; and when they do stop in this country for the summer season, it seldom happens that two of them, male and female, are found together, and therefore woodcocks are very rarely bred in England, though the female will lay eggs.

These birds, which are more plentiful in Ireland than in England, Wales, or Scotland, are chiefly found in thick covers, particularly those with wet bottoms, and underneath holly bushes: they are not, however, fond of covers where there is long grass growing in the bottom, and at the roots of trees. In mild weather, they are found chiefly in the open country, in hedge-rows, &c.; but a severe frost forces them to the thickest covers, and to small running streams, which are sheltered with trees or underwood. The woodcock sees better in the dusk of evening and by moonlight, his sight being very indifferent in the day time; and it must also be remarked, that these birds lie much better the day following a moonlight night than when it has been preceded by a very dark one. On this account, by the light of the moon they are enabled to make a plentiful repast, and the next day are consequently lazy and unwilling to fly; but when the darkness of the night deprives them of food, necessity compels them to seek it in the day time, which otherwise they never attempt.

In woodcock-shooting small springing spaniels are chiefly used: they give notice when the bird rises by barking; and, when well trained, these dogs answer very well. In fact, they are better adapted for this than for pheasant-shooting: but a good setter will be found, even in cock-shooting, to be fully equal, if not superior to, the springer.—Pointers are as little fit for this diversion as for pheasant-shooting.

Woodcock shooting is a pleasant amusement in covers which are not too thick; and if the covers be cut through in several places, it becomes more easy to shoot this bird in its passage when he rises, and also to mark him with more certainty. The woodcock is a clumsy walker, and rises heavily from the ground; the general case of birds with long wings and short legs. It is thought that this bird, as well as the snipe rises from his bill. When a woodcock is found in an open field, a hedge-row, the pass of a wood, or an unfrequented lane, he generally skims the ground slowly, and is very easily shot: indeed, thus circumstanced, he is the easiest of shots: but, when he is flushed in a tall wood, where he is obliged to clear the tops of trees before he can take a horizontal direction (at which time he frequently rises very high, and with great rapidity), then it becomes difficult to seize the moment of shooting, by reason of the turnings and twistings which he is obliged to make in order to pass between the trees. A person is often employed as a beater, which is highly necessary, and may be very useful at the same time in marking. A good marker is of essential service; with his assistance it will be difficult for a woodcock to escape, as he will generally suffer himself to be shot at three or four times before he takes a long flight.

Some have asserted that too much noise cannot be made. Certainly more noise may be made in woodcock-shooting than in any other; but all that is necessary is what the beater makes with his staff in the thickets and hedges, and more than this will be detrimental to the sport. The use of bells is also a bad custom.

WILD DUCK DECOY.

In wild duck-shooting sportsmen must calculate upon much fatigue and disagreeable inconveniences. But this pursuit is usually confined to such as make a livelihood of it. A water-spaniel, which having been previously taught to fetch and carry, will, in case of a duck falling after being shot, bring it immediately out of the water. The places frequented by wild ducks must be approached with as little noise as possible, and the sportsman must take his chance of their rising within gun-shot, as *setting* this kind of game is impossible. The sportsman should be well clad, and have a strong pair of waterproof boots.

The instinct of the wild duck is remarkable; the author of the 'History of Derbyshire,' (Mr. Pilkington,) was one afternoon walking in a path leading through a coppice not much frequented, and passing some brambles, the roots of which were clothed with long grass, he espied a wild duck, with several young ones by her side. He was almost close to her before the parent perceived the danger, when she instantly uttered a loud note of alarm, and bounded almost close to his feet; then, with another jerk, threw herself a little forward, out of the reach of his hand as he stretched it out to take up what he supposed an easy prey. Another hop and flutter threw her to a greater distance; while he pursued, supposing her to have both a leg and wing broken. He marked the bush with his eye, where he saw the young ones, concluding that he could take them at his leisure, after having secured the dam. He briskly continued his pursuit, while the bird persevered in counterfeiting lameness and inability of flight, throwing herself forward to a distance proportioned to his speed, but sufficient to clear his grasp, yet near enough to encourage his hopes. At length, chagrined, and increasing his pace, he began to run, while the bird, on his nearer approach, alternately rose a little on the wing and tumbled upon the ground, thus keeping up his attention till she led him more than half a furlong from the spot where he first perceived her. Rising suddenly above his head, she then winged her flight as in triumph, to a marsh, at the distance of nearly a quarter of a mile, in which there was a large pond, where she alighted secure. Disappointed in obtaining her, he consoled himself by considering that he could certainly take the young ones, and retraced his steps to the bush for the purpose. He examined the spot with care, turning back the grass in every direction for some distance around, and even beat about the contiguous brushwood, but in vain: no ducklings were to be seen, nor could his utmost search discover them. Nature had taught them, when the parent gave the note of alarm, to provide for their safety by escape and concealment.

The first of Octobeı is the day appointed, by act of parliament, for the commencement of the *decoy* business, which about the close of this month is at its height. The extensive marsh lands of Lincolnshire are the tract that is chiefly resorted to in this country by the wild-ducks, and other water-fowl, and prodigious numbers of them are annually taken in the decoys.

A decoy is generally made where there is a large unfrequented pond surrounded by wood, and backed by a marshy and uncultivated country. In different quarters of the pond are constructed *pipes* as they are called, or narrow ditches, covered with a continued arch of netting suspended on hoops, growing narrower as they advance into the wood, and terminating in a purse net. On both sides of the pipe are reed-hedges with intervals between, for the decoy-man to observe what is going on; a number of *decoy-ducks* are also procured, which are taught to lead wild ones into the snare.

As soon as the evening sets in, the decoy *rises* and the wild-fowl approach the shores to feed during the night; the flapping of their wings may be heard in a still night to a great distance, and is a pleasing though melancholy sound. The decoy-ducks soon meet with the wild ones, and conduct them to the mouth of the snare: the man behind the reeds then throws into the pipe some hempseed, of which these birds are very fond, and are thus tempted to advance a little way under the netting. A very small dog well trained for the purpose is next ordered to play about before the screens, and bark at the ducks, who vexed at being disturbed by so petty an assailant, advance to drive him off. When they have by this means been seduced a considerable way up the tunnel, the decoy-duck by diving gets out of the arched net, and the man coming from behind the hedge appears at the entrance of the pipe; the wild-fowl not daring to rush by him immediately, dash forwards into the purse-net, where they are taken.

The London market is principally supplied from the Lincolnshire decoys; ten of which, near Wainfleet, have been known to send to the metropolis, in a single season, thirty-one thousand two hundred ducks, teals, and wigeons.

THE GUN.

The difficulty of procuring guns with barrels possessed of truth and efficacy is well known to sportsmen. Those who have any judgment on this matter may, however, be furnished with both barrel and lock to his satisfaction. A common roller lock of truly wrought materials, with a well tempered hammer, have such length in the respective springs that they may work smoothly and equal the one with the other, will, with good powder promote such instantaneous ignition, that on firing the noise of the lock will be entirely lost in the subsequent explosion. On this subject a popular writer expresses himself in the following manner:

'It may be looked on as presumption to say that our gun-makers would surpass all the inventions of the present day, great as are the emoluments, according to some of them, through the medium of a patent, could they hit on a plan by which the fowling-piece could be made to raise more speedily, and mechanically as it were, to the shoulder, the muzzle and breech being on its arrival equal to the eye, which, however appropriate in their latter respect, it may seem, in our cooler moments, is very rarely so, when snatched up (as is sometimes necessary in cover-shooting) in an instant of time. The more experienced are aware, that, with the proviso above mentioned, the least farther motion, the smallest jog only, if I may so say, transversely or perpendicularly nearer the object, as circumstances may require, is necessary to almost infallibly killing on the wing. Moreover, with the said proviso, there will be no need of shutting an eye, confusion, nor discomposure of the person, as any stander-by may see, that the best shots, who are generally very particular as to how the gun meets the eye, are the least flurried, and take apparently the least pains. Nor is an aim directly at the centre of the object, if, as said before, the muzzle and breech be equal, indispensible. Three or four inches above or below it will commonly bring the bird to the ground, and a much less accurate one will often prevent its escaping.

For gun-stocks we select chiefly the heart of the walnut-tree, sound no doubt, and capable from its solidity and veins of a fine variegated polish. A part of the wood, however, we remove from this, and which some gun-smiths call the sap, is more tough, and though not capable of such a polish, is yet less liable to spring, and not so weighty. Of this the French seem sensible; many are of opinion that even their double-barrelled pieces, which have this lighter stocking, meet the eye with singular celerity.

A keen sportsman has generally a favourite gun, and it is chiefly from the readiness of coming up rectilineally to the eye in the time of need, that it becomes so. In proof of this observation, after many years adherence to a fowling-piece of this favourite stamp, let any one have the barrel thereof fresh mounted, and he will find the difference, although the original stock was lent to the smith as a model, in nine instances out of ten, if not in the shop, at least in cover-shooting, where for a whole day together, it often happens that (what are called) snap shots only can be obtained.

To what has been here advanced, may be added this general observation, viz. that the inside of the gun-barrel, and the surface of every thing in, on, through, or from, which powder can experience the most instantaneous ignition, must be as smooth as possible. Any roughness whatever, any visible porosity, even the smallest thread, caused by indirect drilling of the touch-hole, will entertain and prolong the fusion, if it may be so called, and produce a diminution of effect.

That the fowling-piece is an object of the first consideration will be readily admitted, and every sportsman should be able to form an opinion of its merits, that he may not lay out a considerable sum of money uselessly, or incur those dreadful accidents which proceed from causes by no means obvious at first sight.

BURSTING OF BARRELS.

This accident may be occasioned by any of the following causes;

1. If in loading, the shot be not rammed home close to the powder, and a space be left between the powder and shot, the gun will probably burst on being discharged. Should the space be very small, and the shot lie so as to leave a little windage, (i. e. admit a small quantity of air to pass) the barrel will most likely remain whole; but if, instead of shot a bullet be used, which exactly fits the bore, the accident will most indubitably ensue.

2. This accident may take place from the mouth of the piece being filled with earth or snow, which sometimes happens in leaping a ditch, with the muzzle of the piece pointed forwards. For the same reason the barrel will burst if fixed when the muzzle is thrust into water, a very little depth only below the surface.

3. A barrel may burst from a defect in the work; for instance, if the barrel have been imperfectly welded, or a deep flaw taken place in any part of it; or, lastly, if for want of care in boring, or filing, it have been left of unequal thickness in the sides. The last defect is common, especially in low-priced barrels.

Great attention should be paid to the keeping of the barrel perfectly clean. If a barrel be fired only once, it should be well washed with hot water before it be laid by, (unless it be used again in the course of the same day;) for, after firing, the barrel will quickly become moist, and this moisture will speedily communicate a very corrosive rust, occasioned by the evaporation of the saltpetre used in making gunpowder. After the barrel is well washed with tow, or a piece of flannel, wrapped round the rod, it should, by continual friction with the rod, be made thoroughly dry, and afterwards be rubbed, both inside and out, with only tow or flannel. The breech need seldom be taken out if the gun be properly treated.

The best oil for the barrel, as well as the lock, is that which is obtained from sheeps' feet; but neat's foot oil will answer the purpose, or that which is procured from the fat of horses: whichever is used should be first clarified, for which the following is the best method:—

Put several small pieces of lead, or a few shot, into the bottle containing the oil, and let it remain uncorked. The feculent matter will adhere to the lead, and leave the oil extremely clear. If the oil be thick, it should be exposed to the sun, or kept in a warm situation, while it undergoes the operation of being clarified.

GUNPOWDER.

Experience proves, that powder by the same maker is not always of equal efficacy, our surprise must cease when we find a difference in that which we have from different makers. The difference in that by the same maker, is generally caused by an original deficiency in the constituting properties of one or more of the ingredients; the other receiving therefrom an overdue and preponderating influence. To be always sure of good powder, it should be had *ipso facto* from the maker himself immediately after trial, and precisely from this time should it be kept in vessels which admit neither air nor exudation. Dampness to any degree will, in the respective particles, cause a tendency to dissolution. For this reason it should be kept constantly in well-dried glass bottles, closely corked; nor can powder, once having imbibed dampness approaching to wet, ever be so recovered as to be uniformly powerful. To the respective loads, according to the partiality of the mischief incurred, will attach a proportioned deficiency of effect. To the quick process of drying powder, generally adopted, many other objections may be urged, besides that of the grains being thereby hardened to an improper degree. If the article be kept as above described, there will be no necessity whatever of drying, and the respective loads will then have each its due and respective power.

SHOT.

The patent shot is now generally used, and it is important to the success of the chase that the sportsman should proportion the size of the shot, as well to the particular species of game he means to pursue, as to the season of killing it.

In partridge-shooting, during the month of September, No. 7, 8, or even 9, may be used, (though some choose No. 6, and others, more ridiculously, 3, or 4,) for, at this time, birds spring near at hand, and their feathers are less capable of resisting the shot, than at a more advanced period of the year, Hares, also, at this season, sit closer, and are more thinly covered with fur.

About the beginning of October, at which time partridges are stronger in the wing, No. 5 will, perhaps, answer best. This size seems to preserve a proper medium between shot too large, and that which is too small, and will kill a hare at the distance of forty, or even sixty yards, and a partridge at seventy, or more. In short, it is adapted for all seasons, and many sportsmen use no other. It is true, that distant objects are frequently missed for want of larger shot; but then these bear no proportion to the number which are missed by using shot of too large a size, especially with the feathered game, which enables them to escape in the vacant spaces of the circle or disk described by the shot.

Grouse require larger shot than partridges, as they are stronger birds. The same may be said of pheasants. No. 5 will be found large enough for the strongest game.

For snipe shooting, mustard-seed is generally used, and is certainly the best adapted for this diversion. It is the smallest of all, and called, in some places, dust-shot.

Swan-drops are the largest shot, a few pellets of which will weigh an ounce.

The following table (though considerably different from Mr. Thornhill's scale) will exhibit the method by which the different sizes of shot are distinguished, and also shew the gradations:—

B. B. one ounce contains	58 pellets.
B.	65 do.
No. 1.	82 do.
2.	112 do.
3.	135 do.
4.	177 do.
5.	218 do.
6.	261 do.
7.	289 do.
8.	660 do.
9.	970 do.

The numbers are continued several degrees lower than No 9, but are not common.

RULES FOR SHOOTING.

Several rules must be observed in this sport before a person can become accomplished and successful.

1. Choose a fowling-piece that has a light and thin barrel, and is of equal thicknes in every part.

2. A barrel from 32 to 38 inches generally answers best; the range does not depend on its length.

3. A barrel of 22 or 24 calibre throws its shot as clearly as one of the smallest calibre.

4. The stock should be in proportion to the size of the sportsman. A man who has high shoulders and a short neck, should have a straight stock; on the contrary, a man with low shoulders and a long neck, should have one much bent.

5. Powder ought to be kept very dry, in flasks of copper or tin. The size of the shot must vary with the game and the seasons. Patent shot is the best.

6. The powder must be proportioned to the size of the shot. A measure should be procured, marked with the proper guage.

7. The best wadding is a piece of an old hat, or soft brown paper. It ought neither to be rammed too much nor too little.

8. Immediately on the piece being fired, it ought to be reloaded.

9 The usual distance for killing game with No. 3 shot, is 25 to 35 paces for the footed, and from 40 to 45 paces for the winged.

10. In shooting at a bird flying, or a hare running, take aim *before* the object, in proportion to its distance at the time of firing.

11. A fowling piece should not be fired more than 20 or 25 times without being washed; and the flint should be often changed.

12. The sportsman should hunt with the wind;—the morning is the best time. In warm weather he should take open ground; but in cold weather, search hedges, heath, stubble, and the sunny sides of hills. He should never be impatient to beat and range his ground over again; but let him not examine with the muzzle of his gun. On firing, he should call in his dog; and instead of running to pick up a bird he has killed, let him watch till he sees the covey settle.

WATER BOOTS.

Water boots are absolutely necessary for those who shoot in wet places, or wait in cold nights for wild fowl, and, if good, will effectually repel the water for a long time. They should be drawn over an extra pair of coarse yarn stockings; and so far from being hard to the feet they are exceedingly light and pleasant wear.

Various dressings are recommended, though, perhaps, almost any grease may answer. The first application, however, should be,

Tar, tallow, and bee's-wax, melted, (not too warm) and then poured into the boots; which, after having this shaken into every part of them, should be hung up to let it run out.

Or,

Drying oil,	- -	1 pint.
Yellow wax,	- -	2 ounces.
Turpentine,	- -	2 ounces.
Burgundy pitch,	-	1 ounce.

Melt these over a slow fire, and then add a few drachms of essential oil of lavender, or thyme.

With this the boots should be rubbed, some distance from the fire. The application must be repeated as often as the boots become dry, until they are fully saturated.

ABSTRACT OF THE GAME LAWS.

The Qualification.

In the reign of Richard II. the *qualification* was forty shillings per annum; James I. advanced it to ten pounds. Though these statutes have never been formally repealed, yet they have been rendered a dead letter by the following act of 22 and 23 Charles, c. 25.

'Any person or persons, not having lands of inheritance, or freehold property, in his own or his wife's right, of the clear annual value of one hundred pounds; or leasehold property for life, or a term of ninety-nine years, or longer, of the clear yearly value of one hundred and fifty pounds, (that is, assessed to that amount, and clear of mortgage or other incumbrance,) are declared ineligible *to have or keep for themselves or any other person*, guns, bows, greyhounds, setting-dogs, ferrets, lurchers, nets, harepipes, gins, snares, or other engines for the taking or killing rabbits, hares, pheasants, partridges, or other game.'

This statute is merely prohibitory, and does not subject the party to any pecuniary penalty, but merely authorizes the seizure of the dogs and engines. But by the act of the 5th of Anne, c. 14, any person guilty of an infraction of this law is liable to a penalty of five pounds, one half of which sum is to be given to the informer, and the other half to the poor of the parish, to be levied by distress; the offender may be sent to the house of correction for three months for the first offence, and for every subsequent offence four months. The qualifications of Charles II. and the penalty of Anne, are the modern practice, and may be summed up in a few words, thus:—Pursuing, or killing game, without the recited qualifications, subjects the offender to a penalty of five pounds (supposing him to have a certificate; if he has no certificate, he is liable to an additional penalty of twenty pounds.) And by 9 Anne, c. 25, s. 3, a disqualified person is liable to the same penalty for having game in his possession, unless it is ticketed by a qualified person.

Exceptions to the general Rule of Qualification.

By the same statute of Charles, the following are qualified from the circumstances of their birth, though they may possess no property whatever, viz. the son and heir apparent of an aesquire, or other persons of higher degree. Esquires, according to law, are the four esquires of the king's body; the younger sons of noblemen and their male heirs for ever; the eldest sons of baronets, knights of the Bath, and knights bachelors, and their heirs male in the right line. Persons of higher degree than esquires, are doctors in the three learned professions, serjeants at law, and colonels. It has been asserted, that subaltern officers, whose names appear in their commissions, with an *esquire* attached to them, are therefore esquires strictly speaking; though they appear to be esquires by courtesy only, not in the legal sense of the word. A justice is an esquire as long only as he continues in the commission of the peace. Neither esquires, however, nor any of these persons of higher degree, are qualified to kill game, unless they have the requisite property, whilst their eldest sons are qualified, though possessing no estate whatever! 1 *Term Rep.* 44.

A vicar, in respect of his church, has not an estate of inheritance in the eye of the law, but only for his life; and, therefore, must possess one hundred and fifty pounds per annum. *Caldecot's Cases*, 188.

The owners and keepers of forests, parks, chases, or warrens, being stocked with deer or conies for their necessary use, are qualified without the requisite estate, merely as far as relates to their forests, parks, &c.

The lord of any manor, or royalty, is qualified in a legal sense, though his property may be insufficient for that purpose. In the same way a game-keeper may be said to be qualified, as he has a legal right to shoot on the manor for which he is deputed.

Goods distrained for penalties under the game laws are not repleviable.

Any justice of the peace, or lord or lady of a manor, may take away any hare, or other game, as well as any dogs, found in the possession of an unqualified person.

Game-keepers, or any other persons, may, by warrant of a justice of peace, on proper information, search the houses or other places of unqualified persons, and seize and keep for the use of the lord or lady of the manor, or destroy any dogs, nets, engines, &c. as before expressed.

The 1st of James 1. c. 27, inflicts a penalty of twenty shillings (to the poor), or three months imprisonment, as well as two sureties in twenty pounds each, for shooting or destroying game. And the possession of game, by William and Mary, c. 23, s. 3, subjects an unqualified possessor to an imprisonment of not more than one month, nor less than ten days, and to be whipped and kept to hard labour. This act also specifies, that if any *inferior tradesman* (whatever property he may possess), *apprentice*, or *other dissolute* person, shall hunt, hawk, fish, or fowl, such persons may be sued for *wilfull* trespass the first time he comes on any person's ground, and if found guilty, must pay the *full costs of suit.*

A Game-keeper.

The 23d of Charles II. c. 22, s. 2, authorizes lords of manors, or other royalties, *not under the degree of an esquire,* to appoint game keepers within their manors or royalties, to take and seize all guns, bows, grey hounds, setting-dogs, lurchers, &c. ferrets, trammels, nets, engines, &c. for the purpose of taking and killing game. This act merely empowers game-keepers to use means to prevent the illegal destruction of game; but the 5th of Anne, c. 14, s. 4, enables these game-keepers to kill game upon the manor for which they are deputed, for the use of their master. Selling game, however, without the consent of the lord or lady of the manor, subjects the keeper to an imprisonment in the house of correction for three months.

The 9th of Anne, c. 25, prevents the appointment of more than one game-keeper to one manor, though, prior to this period, the number was unlimited. The act also enjoins that the name of the person appointed shall be registered with the clerk of the peace of the county, and a certificate granted on the payment of one shilling, and to the neglect of such registers a penalty of five pounds is attached. This, again, is rendered null by 25 George III. c. 5, s. 2, which enacts, that the deputation of a game-keeper shall be registered with the clerk of the peace, and a certificate obtained of such registry, under a penalty of twenty pounds. Game-keepers of the royal family are exempt from this, and the royal family themselves procure no certificate. The following is the form of a game-keeper's deputation:

'Know all men by these presents, that I, A. B. of ——, in the county of ——, lord of the manor of ——, in the same county, have nominated, deputed, authorised, and appointed, and by these presents do nominate, depute, authorise, and appoint ——, of ——, to be game-keeper of and within my said manor of ——, with full power, licence, and authority, to pursue, take, and kill any hare, pheasant, partridge, or other game whatsoever, in and upon my said manor of ——, for my sole and immediate use and benefit: and also to take and seize all such guns, bows, greyhounds, setting-dogs, lurchers, or other dogs, ferrets, trammels, low-bells, hays, or other nets, hare-pipes, snares, or other engines, for the pursuing, taking, or killing, of hares, rabbits, pheasants, partridges, or other game, as shall be used within the precincts of my said manor, by any person or persons who by law are prohibited to keep or use the same. In witness whereof I have hereunto set my hand and seal, this — day of——

'—— (Seal.)

'Sealed and delivered in the presence of ——, of —— aforesaid.'

It is the duty of a game-keeper to carry his deputation, as well as his certificate, with him, as without one or other of these, he cannot legally demand the name or certificate of any other person; and, with them, his power in this respect ceases the moment he sets his foot off his own manor.

If, however, a game-keeper be qualified in his own right, he has no occasion to enter his deputation. But a keeper is not authorised, by any statute, to seize game which he may find in the possession of poachers even on his own manor, though it is lawful for him to take their dogs, nets, or other implements. Also, game-keepers, if found killing game off the manors for which they are appointed, are liable to the same penalties as unqualified persons. The only difference, in this case, between them is, that a game-keeper's gun and dogs are not seizable; while those of an unqualified person may be taken.

However, though there is no legal authority for seizing the gun, &c. of a game-keeper, he is liable, should he be seen *beating only* for game on another manor, to the penalty of twenty pounds for having no certificate, and also to five pounds more as being disqualified.

By 43 George III. c. 23, lords of manors are enabled to appoint and depute any person whatever as game-keeper, whether acting in that capacity to any other person or not, or the servant of any other person, qualified or unqualified, to kill game within a specified manor for his own use, or for the use of any other person or persons to be specified in such appointment or deputation, whether qualified or not; nor is it necessary such person should be entered or paid for as the male servant of the lord who thus gives the deputation; and game-keepers thus appointed are to have the same rights and privileges as if they were legally qualified and appointed as game-keepers to the lord of such manors, under any laws in force prior to the passing of this act.

On the appointment of a new game-keeper, a new certificate need not be taken out; but the name and place of abode of the new keeper must be endorsed on the old certificate, by the clerk to the commissioners of the district, or the penalties of the statute will be incurred.

With respect to the appointment of a game-keeper, it appears from 23 Charles II, c. 25. s. 2, that lords of manors, or other royalties, *not under the degree of an esquire*, may appoint game-keepers; from which it is manifest, that persons under that degree have no legal right to depute or appoint, and that game-keepers so appointed are liable to the penalties before mentioned.

Certificate.

By the act of 25 George III. c. 20, every person (except the royal family) in Great Britain, who shall use any dog, gun, net, or other engine for the taking or destroying of game (not being a game-keeper,) shall annually procure a certificate from the clerk of the county, charged with a stamp-duty of two guineas. This stamp-duty was afterwards raised to three guineas; and, in the 48 George III. c. 55, the statute underwent a sort of revision; and the sportsman is now to apply to the collector of the taxes, who will receive the money for the certificate (which is three guineas and a half), and give a receipt for the same, for which receipt he is legally authorised to demand one shilling. The receipt thus obtained is to be delivered to the clerk of the commissioners acting for the district, who will, in return, give the requisite certificate, without any additional expense. A game-keeper's certificate must be obtained in the same way, the expense of which is twenty-five shillings, if he be an assessed servant; and, if not an assessed servant, three guineas and a half.

The act of 48 George II. also added several birds (namely, the woodcock, snipe, and land-rail) to the list of game, as well as the rabbit; with, however, the following exceptions:—the taking of woodcocks, or snipes, in nets, or springes, and the taking or destroying rabbits in warrens, or any inclosed ground; or by any person in land which he occupies.

It should be observed, that merely the certificate will not enable a person to kill game: he must also possess the qualification by property, which we have already mentioned and explained. If a qualified person sport *without* a certificate, he is liable to a penalty of twenty pounds; if a non-qualified person kill or hunt for game *with* a certificate, he still subjects himself to a penalty of five pounds.

The commissioners for the affairs of taxes must annually insert, in one or more of the newspapers in the county, the names and residences of the persons who have procured certificates.

Trespass.

This term applies either to qualified or non-qualified persons; and means literally the entry of one man upon the grounds of another, without the occupier's permission, and doing some damage, however trifling, to his real property, for which an action may be brought, and satisfaction obtained according to the extent of the mischief, or the malicious intention of the trespasser. Nevertheless, in order to prevent, as much as possible, vexatious litigation, it is enacted, by 43 Elizabeth and 22 and 23 Charles II., that where less damages than forty shillings are given by the jury, the plaintiff shall be allowed no more costs than damages; unless (see 8 and 9 William and Mary, c. 11) it shall appear that the trespass was *wilful* and *malicious*, in which case the plaintiff shall recover full costs of suit.

A man becomes a *wilful* and *malicious* trespasser, in the legal sense of the term, if he enter again upon the land or manor from which he has been desired, either verbally or by a written notice, to abstain.

The occupier of land can, on such land, demand the address of a sportsman, or a sight of his certificate, a refusal of which subjects the party to a penalty of twenty pounds. This demand may also be made by any assessor or collector of taxes of the parish, commissioner, surveyor, inspector, game-keeper of the manor, or the landlord or lessee of the land upon which the sportsman is found.

A verbal notice from the occupier or landlord is sufficient; and, indeed, the *occupier* of land has a legal right to order the lord of the manor, or even his own landlord, to abstain from sporting on the ground he occupies, unless he has secured this privilege by a clause in the lease, which sporting landlords generally take care to have inserted.

From either a keeper, or lord of a manor, a verbal notice is not sufficient; as keepers generally carry printed notices, which ought to be drawn up in the following manner:—

Oct. 29, 1823.

'To Mr. ——

'I hereby give you notice, that if you hunt, set, net, hawk, fish, or fowl, or use any other method to destroy the game upon any of my lands, manors, or royalties, within————, I shall deem you a wilful trespasser, and proceed against you as the law directs.

'—— ——.

'To Mr. ——'

This notice must be signed by every tenant or occupier of land throughout the manor:—if any tenant refuse his signature, the notice will not extend to the land of which he is in possession; but the mandate of the lord is generally availing (if the lease provide no remedy.) As the lord is seldom owner of the whole fee-simple of the manor, it frequently happens, that occupiers of land independent of him will have nothing to do with his notices, and from such land he cannot debar the sportsman, if the occupier have no objection to his sporting on it.

N. B. A trespass is deemed *wilful* (though no damage may have been done) where the sportsman comes upon ground from which he has been legally noticed to abstain.

A notice remains in force for the life of the individual to whom it is given; with this exception, however, that if the manor change its lord, a second notice from the new lord will be necessary; or, if any of the land change its occupier, a new notice by the new occupier must be given.

Legal Property.

The legal property which qualified persons have, generally continues so long *only* as the game remains *within* the limits of the manor or liberty of the owner; yet it is held, that if after having been started upon a person's own grounds, it be pursued and killed on those of another, it will, nevertheless, be the property of him who started it, because the possession which he gained by finding it within his *own liberty* is *continued* by the *immediate* pursuit. 11 *Mod. Rep.* 75. But if it be started on *another man's ground*, and killed there, it will belong to him on whose ground it was killed, this property arising *ratione soli. Lord Raym.* 251.

Moreover, if, having been started on another person's ground, it be killed on that of a *third person*, it will belong neither to him on whose ground it was started, nor to him on whose ground it was killed, but to the person who killed it, though he will be guilty of a trespass on the grounds of both the other persons.

But if a stranger start game in the *chase or free warren* of one man, and hunt it into the liberty of another, the property will continue in the owner of the chase or warren, and the keeper may pursue and retake it; for, whilst the keeper pursues it, it does not in law pass into a new liberty.

A Chase

Is a privileged place for the keeping of beasts of chase of royal game, with exclusive power of hunting therein. 2 *Black. Com.* 38.

A free Warren

Is a franchise granted by the king for the custody of beasts and fowls of warren, viz. hares, rabbits, partridges, and pheasants; but this franchise is now little known, the name being retained principally in grounds set apart for breeding rabbits. 2 *Black. Com.*

Seasons for hunting or destroying Game.

The season for shooting grouse (called red game) commences on the 12th of August, and concludes on the 10th of December. Heath-fowl (black game) begins on the 20th of August, and ends on the 10th of December. The mere possession of these birds at any other period of the year (except such as may be kept tame), subjects the party (13 Geo. III. c. 55.) to a penalty of not more than twenty pounds nor less than ten pounds for the first offence; and for every subsequent offence, to not more than thirty pounds, nor less than twenty pounds; half to go to the informer, and the other half to the poor of the parish; and, in case where neither penalty nor distress can be had, to imprisonment of not less than three, nor more than six months. In new forests, the season for heath-fowl does not commence till the 1st of September.

Bustard-shooting commences the 1st of September, and concludes the 1st of March; and the same penalties are attached here as for heath-fowl and grouse.

Upon grouse-mountains, or wastes, the occupier is forbidden to burn heath, furze, &c. between the 2d of February and the 24th of June, upon pain of being committed to the house of correction, there to be whipped and kept to hard labour for a period not exceeding one month, nor less than ten days.

The partridge season commences on the 1st of September, and ends the 1st of February. The pheasant season begins the 1st of October, and concludes with the 1st of February. The possession of either of these species of game at any other period (except where they are kept tame) subjects the party to a penalty of five pounds for *every bird* (2 Geo. III. c. 19, and 39 Geo. III. c. 34).

The taking of wild ducks, teal, widgeons, &c. between the 1st of June and the 1st of October, renders the party liable to the penalty of five shillings (9 Anne, c. 25, and 10 Geo. II. c 32).

The season for hare-hunting is from Michaelmas till Candlemas; but there does not appear to be any penalty attached to the infraction of this law.

For tracing hares in the snow a penalty of twenty shillings is inflicted (1 Jac. 1. c 27), and the taking them in snares or gins is punished in the same manner. The 22d and 23d Car. II. inflicts a penalty of ten shillings for this offence. These acts, however, are not resorted to; for the true sportsman will never be guilty of such offences, and the poacher is more effectually punished by the fine attached to his want of certificate, &c.

For woodcocks or snipes there is no specified time.

To hunt or destroy game on a Sunday, or on Christmas day, or in the night (that is, between seven o'clock at night and six in the morning, from the 12th of October to the 12th of February, and between nine o'clock at night and four in the morning from the 12th of February to the 12th of October), renders the party liable to a penalty of not less than ten pounds, nor more than twenty pounds, for the first offence; for the second, not less than twenty pounds, nor more than thirty pounds; half to the informer, and half to the poor (13 Geo. III. c. 80).

By 39 and 40 Geo. III. c. 56, if two or more persons are found in any forest, chase, park, plantation, field, &c. or other open or inclosed ground, in the night (viz. between the hours of eight and six from the 1st of October to the 1st of February, or between ten and four from the 1st of February to the 1st of October), with any gun or other instrument to destroy game, the keeper or occupier is authorised to apprehend such offenders, who are liable (by 17 Geo. II.) to be committed to the house of correction as rogues and vagabonds.

By 4 and 5 Will. and Mary, lords of manors, or any persons authorised by them as keepers, are empowered to resist such offenders, and are exempted from punishment on that account.

Jac. I. c. 27, inflicts a penalty of twenty shillings for the wilful destruction of every egg of a pheasant or partridge. The eggs of wild fowl are also protected by a statute of 25 Henry VIII. c. 11.

Of Trafficking in Game, &c.

By the 1st of James I. c. 27, it is enacted, that if any person buy or sell any deer, hare, partridge, or pheasant, such person shall, on conviction before two justices (or at the assizes or quarter-sessions), forfeit, for every deer, forty shillings; for every hare, ten shillings; for every pheasant, twenty shillings; and for every partridge, ten shillings; half to the informer, and half to the poor. But pheasants or partridges reared by the hand, or brought from abroad, are not included in this act.

By the 5th of Anne, c. 14. s. 2, it is enacted, that if any higgler, chapman, carrier, inn-keeper, victualler, or ale-house keeper, shall have in his possession any hare, pheasant, partridge, moor or heath-game (unless where a carrier is transporting such game for a qualified person), or shall buy, sell, or expose for sale, any such hare, &c. such offending person shall forfeit the sum of five pounds; and the oath of one witness shall be a sufficient conviction; half the penalty to the informer, and the other half to the poor of the parish; to be distrained for, if necessary; and, in default thereof, the offender to be committed to the house of correction for three months; and for the second and every subsequent offence, four months.

The same act allows any person buying and selling game, to inform against any other person so offending; to have the same benefit as any other informer; and be discharged himself from penalties.

The lord of the manor, or justice of the peace, may also take to his own use any game which shall be found in the custody or possession of any unqualified person; unless protected by a qualified person.

Finally, if any person, whether qualified or unqualified, shall sell or expose for sale any hare, pheasant, partridge, or moor or heath-game, every such person shall be liable to the penalty of five pounds for every hare, &c. on the oath of one witness; half to the informer, and half to the poor of the parish where the offence was committed: the penalty to be levied by distress, if necessary; and, for the want thereof, the offender to be committed to the house of correction for three months for the first, and four months for every subsequent offence. And, if any of the above mentioned game be found in the house, shop, or possession of any poulterer, salesman, fishmonger, cook, or pastry-cook, the same shall be deemed the act of exposing them to sale.

Particular Laws to prevent the improper Destruction of Hares.

The act of 14 and 15 Henry VIII. c. 10, inflicts a penalty of six shillings and eight-pence for tracing and killing a hare in the snow. By the 1st of James I. c. 27, three months' imprisonment is inflicted on the offender for either tracing or *coursing* a hare in the snow; unless the offending party pay to the churchwardens, for the use of the poor, twenty shillings for every hare, or within one month after commitment becomes bound with two sureties, in twenty pounds each, not to offend again in like manner. Two witnesses are necessary in this case, as also two justices of the peace.

The same penalty (by the same act) is also inflicted for taking hares with hare-pipes, snares, or any other engines; and, to convict, two witnesses and two justices are necessary, as in the preceding case.

By the 22d and 23d of Charles II. c. 25, if any person be found using or setting any snare, or other engine, for the purpose of taking hares, he shall make the injured party such recompence as the justice of the peace shall appoint, and pay down immediately, for the use of the poor, a sum not exceeding ten shillings; or be committed to the house of correction for a time not exceeding one month. In this case, the oath of one witness, before one justice, is sufficient; but it must take place within a month after the offence is committed.

Rabbits and Pigeons.

By 3 James I. no person has a right to hunt or kill conies, unless possessed of hereditaments of the yearly value of forty pounds, or be worth in goods two hundred pounds, or have an inclosed rabbit-ground of the value of forty shillings a year. An infringement of this law subjects the offender to have his dogs or engines seized by *any* person having hereditaments in fee, in tail, or for life, of the annual value of one hundred pounds in his own right, or that of his wife; who is entitled to keep them for his own use.

By 22 and 23 Charles II. c. 25, it is enacted, that if any person shall, at any time, enter any ground lawfully used for breeding or keeping rabbits (whether inclosed or not), and chase or kill any of these animals, against the will of the owner, not having lawful title so to do, shall, upon conviction by one witness, or his own confession, before a justice of the peace, forfeit to the injured party treble damages and costs, be imprisoned for three months, and find security for future good behaviour: but the prosecution must be commenced before the expiration of one month after the offence has been committed.

By the same statute it is also enacted, that no person shall kill or take in the *night* any rabbits upon the *borders* of warrens or other grounds lawfully used for keeping conies, except the owner or lawful possessor of the ground upon which such rabbits may be found, or a person employed by such owner or possessor. And offence subjects the party to make such satisfaction as the justice shall think proper, and to forfeit, for the use of the poor, a sum not exceeding ten shillings; or be committed to the house of correction for a term not exceeding one month. This penalty too is inflicted by the same act upon any person found setting or using any snares or other engines for the taking or destroying of conies.

By 9 Geo. I. c. 22, (called the Black Act,) any person entering, *armed and disguised*, any grounds where rabbits are lawfully kept, and robbing the same; or who shall, though *not armed and disguised*, rescue any person in custody for such an offence, or procure any person to join him in such an act, such person shall be deemed guilty of felony without benefit of clergy.

The act of 5 Geo. III. c. 14, makes it transportation for seven years, or such lesser punishment by whipping, imprisonment, or fine, as the court shall think fit, for any person to enter any rabbit-ground in the night time, and there take or kill any coney against the will of the owner, or aid and assist therein.

If rabbits, however, come upon a person's ground, and damage his herbage, or corn, it is lawful for him to kill them.

Any person who shall shoot, or destroy in any manner, any pigeon, shall, on conviction before two justices, on the oath of two witnesses, or on his own confession, pay, for the use of the poor, twenty shillings for every pigeon: or be committed to gaol for three months, and within one month after commitment find sureties not to offend again.

However, by 2 Geo. II. c. 29, one witness and one justice are sufficient; and the offender is to forfeit twenty shillings to the person who prosecutes, or be committed to the house of correction and kept to hard labour for any term not exceeding three calendar months, nor less than one.

N. B. A man has a right to shoot pigeons, as well as rabbits, if he find them destroying his corn.

The 8th of Geo. I. c. 19, provides, that, if any person shall be liable to any pecuniary penalty, upon conviction before any justice of the peace, respecting game, the prosecutor may, if he think proper, sue for the *whole* of such penalties (2 Geo. 111.) in the courts of Westminster; and, if he recover the same, shall be allowed double costs, and no part of such penalty paid to the use of the poor. But such action must be brought within six months after the offence, and in the name of the attorney-general, or some officer of the stamp duties. *Burn's Inst.*

Dogs.

It is provided, by 10 Geo. III. c. 18, that if any person shall steal *any dog or dogs, of any kind or sort whatsoever*, not only from the owner, but from any person to whom such dog or dogs may have been entrusted; or shall *sell, buy, receive, harbour, detain, or keep*, any such dog or dogs, knowing the same to be stolen, every such offender, being thereof convicted, on the oath of *one* witness, or on his own confession, before two justices, shall, for the first offence, forfeit a sum not exceeding thirty, nor less than twenty pounds, at the discretion of such two justices; together with all charges previous to and attending such conviction, to be ascertained by the said justices. And if such penalty is not forthwith paid, the offender shall be committed to the house of correction, or common gaol, for a period of not less than *six*, nor exceeding *twelve* calender months, or until the said penalties and charges are paid.

If such person be convicted of a second offence, he shall forfeit a sum not exceeding *fifty*, nor less than *thirty* pounds, together with the expence attending such conviction; and, in case of non-payment, be committed to the house of correction or common gaol, for any time not exceeding *eighteen*, nor less than *twelve* months, or until the fine shall be paid; one moiety of such penalty to the informer, and the other to the poor of the parish where the offence has been committed; and such justices shall order the offender to be publicly whipped within three days after commitment, in the town wherein such gaol or house of correction shall be, between the hours of twelve and one in the day time.

A justice of peace, upon information, may grant a warrant to search for any dog or dogs stolen as aforesaid; and, in case either dog or his skin shall be found, the said justice shall take and restore such dog or skin to its right owner, and the person in whose possession or custody such dog or skin was found (such person being privy to the theft) shall be liable to the like penalties and punishment as are inflicted on persons convicted of stealing any dog or dogs under this act. However, should any person think himself aggrieved by any thing done in pursuance of this act, he may appeal to the next general quarter-sessions, within *four* days after the cause of complaint shall arise, such appellant giving *fourteen* days' notice in writing of his intention to appeal; and the justices at such sessions shall determine the appeal in a summary way, and award such costs as they think proper; which determination shall be final.

There must certainly be a mistake of *four* for *fourteen*, or *fourteen* for *four*, for an appellant cannot give *fourteen days notice* within *four days after the cause of complaint.*

The owner of a mischievous dog, if suffered to be at large unmuzzled, may be indicted, and an action for damages will, in such case, lie against him: such action, however, cannot be brought, unless the owner had notice of his having bit some person once before.

An action will also lie against a man for keeping a dog accustomed to bite sheep, provided it can be proved that the owner knew him to be guilty of such a practice; and his having *once* wounded or killed a sheep is sufficient to constitute it.

If a dog fall upon another, the owner of the attacked dog may beat, and even kill, his enemy, in order to save him.

Duty on Dogs.

Every person who shall keep any grey-hound, hound, pointer, setting-dog, spaniel, lurcher, or terrier, or who shall keep two or more dogs, of whatever description or denomination the same may be, shall annually pay fourteen shillings for each.

And every person who shall inhabit any dwelling-house assessed to any of the duties on inhabited houses, or on windows or lights, and shall keep one dog and no more, not being of the above description, shall pay eight shillings annually for such dog.

The duty does not extend to dogs under six months old; the proof of the age to lie with the owner, on an appeal to the commissioners.

Persons compounding for their hounds are charged thirty-six pounds.

Rabbits.

As these animals afford considerable sport, the following observations may be found necessary:—

A few rabbits turned out in the spring into a wood of a dry light soil, will breed plenty for the sportsman's diversion, and will dig themselves earths if they like the wood; should they not breed well the first season of turning out, they must be spared the next winter. Any person who may have a few acres of sandy land, should sow spots of furze of an acre or two each on it, and turn out some rabbits; they will, in running from furze to furze, shew very great sport. Should they make many burrows, stop the most of them with a wisp of grass, and take it out when as many as are wanted are killed. Two or three beagles are the best dogs to hunt them.

It is well known to experienced sportsmen, that some days' rabbit-shooting have very far exceeded the best days' pheasant-shooting, in number of shots.

Poachers will catch rabbits, either by ferreting the earths, coursing with a lurcher in nets, in wires, the same as hares, only they are not set so high, or shoot them where they feed at dusk, or by moonlight. Cats must be destroyed. It has long been thought hares will not lie in a wood with rabbits: this is very wrong; on an estate belonging to a sportsman of celebrity, they shoot one hundered couple of rabbits in a year, and near half that number of hares.

FISHING.

Fishing is distinguished with regard to its instrument into that performed with the net, for fish that go in shoals; and that with the hook, for solitary fish; which latter is properly called *angling*.

Fishing, again, is distinguished with regard to its object into that performed in salt water, and that in fresh. The first practised for whales, herring, cod, salmon, pearls, mackarel, and other sea-fish. The latter practised for pike, trout, carp, tench, perch, dace, eels, &c.

The instruments principally used in angling or fishing with the hook, are the rod, line, hook, and fly.

The points on which the art of fishing chiefly turns are the proper season, place, bait, and manner of application. What relates to each thereof, we shall here give the reader in the several kinds of fishing chiefly practised among us.

In March, April, and September, the warmest days are the best for fishing, and the bait must be deep; for the fish in these cool months lie near the bottom. In fly-fishing, it is always observed, that the fish will rise best after a small shower of rain, that has just beat down the flies upon the water without mudding it. March, April, May, and June, are the best months for fly-fishing, and the best hours are about nine in the morning, and three or four in the afternoon; in a still warm evening they will bite as long as the day-light lasts, at those seasons when the gnats are seen most plentifully about in the air.

In the extremity of heat, when the earth is parched with drought, there is but little sport to be expected in fishing in any water. In cold weather, when there is a white hoary frost in the morning, the fish will not bite kindly all day, except in the evening, if that should prove serene and warm.

Too much wind is never convenient for fishing, though a little is rather advantageous than otherwise. It is bad fishing about sheep-shearing time, in waters where the sheep are washed; for the fish glut themselves in such a manner with what is washed from these creatures, that they will not take any bait till that season is over.

North and east winds are enemies to fishing; and it is not right to fish soon after the time of the fish spawning, for they are then sick, and have no great appetite, so that they do not bite readily. All fish have a natural fore-knowledge of a shower of rain, and when clouds are coming on that will fall in rain, they will not bite; the expert angler, who is used to this, often escapes being wet to the skin by it.

FISHING-RODS.

Fishing-rods are of various sorts, as, 1. a troller or trolling-rod, which has a ring at the end of the rod for the line to go through when it runs off a reel. 2. A whipper or whipping-rod, a top-rod that is weak in the middle, and top-heavy, but all slender and fine. 3. A dopper, which is a strong rod, and very light. 4. A snapper, or snap-rod, that is, a strong pole, peculiarly used for the pike. 5. A bottom-rod, being the same as the dopper, but somewhat more pliable. 6. A sniggling or poking-stick, a forked stick, having a short strong line, with a needle, baited with a lob-worm; this is only for eels in their holes.

Fishing-rods are made of different materials and strength, according to the purposes for which they are used: in fishing with more than one hair, and with a silk-worm gut, red deal is reckoned the best, with hickery top, and the length of the whole rod should be about four yards; but for a small fly and single hair, the length of three yards will be sufficient, with the top of yellowish hickery, and about nine inches of whalebone, near as long as the stock, which should be of white deal. The stocks or buts of rods are generally of ground hazle, ash, or willow, about two or three feet long; and every joint should gradually taper to the top. Hazle tops are preferred, though some use the Bamboo cane, and say it exceeds the best hazle. For ground angling, especially in muddy waters, the cane or reed is preferred for a stock; with a hazle top, consisting of one, two, or three pieces, and a small piece of round, smooth, taper whalebone, which is whipped to the hazle with strong silk, rubbed with shoe-maker's wax; the whole length of the rod being five yards or five and a half yards. The best method of piercing hazle and bone, is first to whip the end of the hazle with thread, and to bore it with a square piece of iron of a proper size; and then make the thick end of the bone, first dipped in pitch to go into it; after which let it be scraped, filed, and neatly whipped. However, the neatest rod may be thus made: get a thick white deal or fir-board, free from knots, and seven or eight feet long; let this be divided by a joiner into several breadths, and with his planes let him shoot them round, smooth, and taper. To one of these fasten an hazle rod, six or seven feet long, which may consist of two or three pieces; to the top of which fix a piece of yew, about two feet long, made round, taper, and smooth, and to the yew a piece of small, round, smooth whalebone, five or six inches long. The fir may be coloured by warming it at the fire, and with a feather dipped in aqua fortis, stroking it over and chasing it into the wood, which will make it of a pure cinnamon colour.

It is found useful to have rings or eyes made of fine wire, and placed upon the rod from one end to the other, in such a manner as that when the eye is laid to one you may see through all the rest: through these rings the line is made to run, which will thus be kept in a due posture; and you must have a winch or wheel affixed to the rod about a foot above the end, by which, whenever it is proper, you may give range to the fish.

FISHING-HOOKS.

The fishing-hook, in general, ought to be long in the shank, somewhat thick in the circumference, the point even and straight: let the bending be in the shank. For setting the hook on, use strong, but small silk, laying the hair on the inside of your hook; for if it be on the outside, the silk will fret and cut it asunder.

There are several sizes of these fishing-hooks, some big, some little; and of these some have peculiar names, as, 1. Single-hooks. 2. Double-hooks, which have two bendings, one contrary to the other. 3. Snappers or gorgers, which are hooks to whip the artificial fly upon, or to bait with the natural fly. 4. Springers or spring-hooks, a kind of double-hooks, with a spring which flies open, being struck into any fish, and so keeps its mouth open.

FISHING-FLOATS.

Fishing-floats are little appendages to the line, serving to keep the hook and bait suspended at the proper depth, to discover when the fish has hold of them, &c.

Of these there are divers kinds, some made of Muscovy duck quills, which are the best for slow waters; but for strong streams, sound cork, without flaws or holes, bored through with an hot iron, into which is put a quill of a fit proportion, is preferable; pare the cork to a pyramidal form, and grind it smooth.

FLY-FISHING.

The fly is either *natural* or *artificial.* Natural flies are innumerable: the more usual on this occasion are the dun-fly, the stone or May-fly, the red-fly, the moor-fly, the tawny-fly, the vine-fly, the shell-fly, the cloudy and blackish-fly, the flag-fly; also caterpillars, canker-flies, bear flies, &c. all which appear sooner or later, according to the forwardness or backwardness of the spring. To know the particular fly the fish most covets, when you come in the morning to the river-side, beat the bushes with your rod, and take up what variety you can of all sorts of flies; try them all, and you will quickly know which are in most esteem; not but that fish will sometimes change their fly; but it is only when they have sometimes glutted themselves therewith.

There are two ways to fish with natural flies, either on the surface of the water, or a little underneath it.

In angling for chub, roach, or dace, move not your natural fly swiftly, when you see the fish make at it; but rather let it glide freely towards him with the stream; but if it be in a still and slow water, draw the fly slowly sideways by him, which will make him eagerly pursue it.

The artificial fly is most successfully used in blustering weather, when the waters are so troubled by the winds that the natural fly cannot be seen, nor rest upon them.

Of this artificial fly there are reckoned ten principal sorts;

1. The dun-fly, in March, made of dun wool, and the feathers of a partridge wing. 2. A dun-fly, made of black wool, and the feathers of a black drake; the body made of the first, and the wings of the latter. 3. The stone-fly, in April, the body made of black wool, dyed yellow under the wings and tail. 4. The ruddy-fly, in the beginning of May; the body made of red wool, and bound about with black silk, with the feathers of a black capon, which hang dangling on his sides next his tail. 5. The yellow or greenish fly, in June; the body made of black wool, with a yellow list on either side, and the wings taken off the wings of a buzzard, bound with black broken

hemp. 6. The moorish-fly; the body made of duskish wool, and the wings with the blackish male of a drake. 7. Tawny-fly, till the middle of June; the body made of tawny wool, the wings made contrary one against the other, of the whitish mail of a white drake. 8. The wasp-fly, in July; the body made of black wool, cast about with yellow silk, and the wings of drake's feathers. 9. The steel-fly, in the middle of July; the body made of greenish wool, cast about with the feathers of a peacock's tail, and the wings made of buzzards' wings. 10. The drake-fly, in August; the body made of black wool, cast about with black silk, his wings of the mail of a black drake, with a black head.

The best rules for artificial fly-fishing are,

1. To fish in a river somewhat disturbed with rain, or in a cloudy day, when the waters are moved by a gentle breeze; the south wind is best; and if the wind blow high, yet not so but that you may conveniently guide your tackle, the fish will rise in plain deeps; but if the wind be small, the best angling is in swift streams.

2. Keep as far from the water-side as may be; fish down the stream, with the sun on your face, and touch not the water with your line.

3. Angle always in clear rivers with a small fly and slender wings, but in muddy places use larger.

4. When after rain the water becomes brownish, use an orange fly; in a clear day, a light-coloured fly; a dark fly for dark waters, &c.

5. Let the line be twice as long as the rod, unless the river be encumbered with trees.

6. For every sort of fly have several of the same, differing in colour to suit with the different complexions of several waters and weathers.

7. Have a nimble eye and active hand, to strike presently with the rising of the fish, or else he will be apt to throw out the hook.

8. Let the fly fall first into the water, and not the line, which will scare the fish.

9. In slow rivers or still places, cast the fly cross over the river, and let it sink a little in the water, and draw in gently back with the current.

Salmon flies should be made with their wings standing one behind the other, whether two or four. That fish delights in the gaudiest colours that can be; chiefly in the wings, which must be long, as well as the tail.

CARP FISHING.

The carp is generally held the queen of fresh-water fish. It is exceeding subtle, and of all others, the eel only excepted, lives longest out of water.

Great patience is requisite in angling for carp, on account of their incredible policy. They always choose to lie in the deepest places; they seldom bite in cold weather; and in hot, a man cannot be too early or too late for them. When they do bite there is no fear of the hold. The tackle must be very strong, and it will be proper to bait the place beforehand, where it is to be fished for, with a coarse paste. It may be also proper to bring the carp to the place intended for angling, by throwing in cow-dung and blood, or bran and blood mixed together, or some chickens guts cut small. The baits are the red-worm, in March; the cadew, in June; and the grasshopper, in July, August, and September.

CHUB FISHING.

The chevin or chub is a fresh water fish with a large head. It spawns in March, and is very strong, though inactive, yielding in a very little time after it is struck; and the larger it is the quieter. His bait is any kind of worm or fly, particularly the large yellow moth; also grains, cheese, the pith in the bone of an ox's back, &c. He affects a large bait, and variety of them at the same hook. Early in the morning angle for him with snails; but, in the heat of the day, choose some other bait; and in the afternoon, fish for him at ground or fly.

EEL FISHING.

The silver eel may be caught with divers baits, particularly powdered beef, garden-worms or lobs, minnows, hen's guts, fish, garbage, &c. But as they hide themselves in winter in the mud, without stirring out for six months, and in the summer, they take no delight to be abroad in the day, the most proper time to take them is in the night, by fastening a line to the bank side with a hook in the water; or a line may be thrown at large, with a good store of hooks baited, and plumbed with a float, to discover where the line lies in the morning. A small roach does well here for a bait, the hook being laid in his mouth.

GUDGEON FISHING.

The gudgeon is a small fish of a very delicious taste. It spawns three or four times in the summer season, and feeds in streams and on gravel, slighting all kinds of flies; but is easily taken with a small red worm, fishing near the ground; and being a leather-mouthed fish, will not easily get off the hook when struck. When you angle for gudgeons, stir up the sand or gravel with a long pole, which will make them gather to the place and bite the faster.

PEARCH FISHING.

The pearch or perch spawns in February or March, and bites best when the spring is far spent. The proper baits are the bradling, minnow, and small frog; as also the lob-worm, bob, oak-worm, gentle, wasp, and cab-bait. The minnow yields the best sport, which is to be alive, and stuck on the hook through the upper-lip or back-fin, and kept swimming about mid-water.

PIKE FISHING.

There are two ways of fishing for the pike: by the *ledger bait* and the *walking bait*. 1. The ledger bait is that fixed in one certain place, and which the angler may leave behind him. 2. The walking bait is that which the fisher casts in, and conducts with a rod, &c. This is perforated by a troll, with a winch for winding it up. At the top of the line is to be placed a ring for the line to be run through. The line, for two yards and a quarter next the hook, to be of silk double, and armed with wire the length of seven inches. On the shank of the hook is to be fastened a smooth piece of lead, so as to sink the fish-bait, which is to be a gudgeon with its head downwards. Thus disposed, the bait is to be cast up and down; and if you feel the fish at the hook, give him length enough to run away with the bait, and paunch it: then strike him with a smart jerk. This fish bites best about three in the afternoon in clear water, with a gentle gale, from the middle of summer to the end of autumn; but in winter all day long; and in the spring he bites best early in the morning, and late at night.

ROACH FISHING.

To angle for the roach or rochet in April, cads or worms are proper baits; so are small white snails or flies in summer. The bait is always to be under water, for this fish will not bite at top. Others use the May-fly in that season with good success. In autumn, a paste must be used, made of the crumb of white bread moulded with a little water, laboured with the hands into a tough paste, and coloured not very deep, with red lead. In winter, gentles are the best bait.

TENCH FISHING.

The season for catching this fish is in June, July, and August very early and late, or even all night, in the still part of rivers. His bait is a large red worm, at which he bites very eagerly, especially if first dipped in tar. He also delights in all sorts of pastes made up of strong scented oils, or with tar; or a paste of brown bread and honey; nor does he refuse the cad-worm, lob-worm, flag-worm, green gentles, cod-bait, or soft boiled bread-grain.

TROUT FISHING.

The trout is a delicious fresh water fish, speckled with red and yellow, coming in and going out of season with the buck, and spawning in the cold months of October and November, whereas all the other species spawn in hot summer weather. There are divers kinds of this fish, all valuable; but the best are the red and yellow trouts; and of these the female, distinguished by a less head and deeper body, is preferred. They are known to be in season by the bright colour of their spots, and by their large and thick back; which last may serve also as a rule for other fish. Through the whole winter they are sick, lean, and unwholesome, and frequently lousy. As the spring comes on, deserting the still, deep waters, they repair to the gravelly ground, against which they continue to rub till they get rid of their lice, which are a kind of worms with large heads. From that time they delight to be in the sharp streams, and such as are swift, when they lie in wait for minnows and May-flies. At the latter end of May they are in their prime.

The usual baits whereby the trout is caught are the worm, minnow, and fly, either natural or artificial. The proper worms are the brandling, lob-worm, squirrel-tail worm, which has a streak round the back, a red head, and a broad tail, earth-worm, dung-worm, and maggot or gentle, especially the three first; the brandling is commonly found in an old dung-hill, or under cow-dung, or else among tanner's bark: the others are found in the earth, and under large stones, or stumps of trees; but whatever worms are used, they are the better for keeping, which is to be done in an earthen pot, with moss, frequently changed. To take the trout with a ground bait, the angler should have a light, taper rod, with a tender hazel top; and may angle with a single hair of three links, the one tied to the other, for the bottom of the line, and a line of three-haired links for the upper part: with this sort of tackle, if the sportsman has room enough, he will take the largest trout in any river. The angler must always keep out of sight, and the point of the rod must be down the stream. The season for fishing for the trout for the ground bait begins in March, and the mornings and evenings are the best time of the day; but in cloudy weather the sport may be followed all day long. When the minnow is used, chuse the whitest, and that of middling size; slip the hook through his mouth, and the point and beard out at the tail, so as it may lie almost straight on the hook. Then try, against the stream, whether it will turn. The tackle in this case may be stronger, for the trout will seize this bait as soon as it comes in sight; the upper part of the line may be of three silk and three hairs, and the lower of two of each; and the hook may be moderately large.

By 1 Elizabeth cap. 21. no trout is to be taken under eight inches in length; and by statute 24 Anne, cap. 21, sea-trout is not to be taken in particular rivers, creeks, or arms of the sea, between June 30th and Nov. 11th. By 30 Geo. II. cap. 21. no trout is to be taken in the Thames or Medway between November 11th and August 24th, or to be of less weight than one pound.

CURIOUS ANECDOTES.

Before giving some remarkable sporting anecdotes, we will relate a few well authenticated stories of the sagacity and fidelity of the dog, the pleasing and necessary companion of all sportsmen.

The following anecdote, recorded by the late Mr. C. Dibdin, affords a striking instance of the attachment of a dog:—

'A gentleman, who had a dog of a most endearing disposition, had an occupation which obliged him to go a journey periodically, about once a month. His stay was short, and his departure and return regular, and without variation. The dog always grew uneasy when first he lost his master, and moped in a corner, but recovered himself gradually as the time for his return approached. When he was convinced that his master was on the road, at no great distance from home, he flew all over the house, and if the street door happened to be shut he would suffer no servant to have any rest till it was opened. The moment he obtained his freedom, away he went, and, to a certainty, met his benefactor about two miles from town. He played and frolicked about him till he obtained one of his gloves, with which he ran, or rather flew home, entered the house, laid it down in the middle of the room, and danced round it. When he had sufficiently amused himself in this manner, out of the house he flew, returned to meet his master, and ran before him, or gambolled by his side till he arrived with him home. This lasted till the old gentleman grew infirm, and incapable of continuing his journies. The dog, by this time, had also grown old, and became at length blind, but this misfortune did not hinder him from fondling his master, whom he knew from every other person, and for whom his affection and solicitude rather increased than diminished. The old gentleman, after a short illness, died. The dog *knew the circumstance*, watched the corpse, blind as he was, and did his utmost to prevent the undertaker from screwing up the body in the coffin, and most outrageously opposed its being taken out of the house. Being past hope, he grew disconsolate, lost his flesh, and was evidently verging towards his end. One day he heard a gentleman come into the house, and rose to meet him. His master being old and infirm, had worn ribbed stockings for warmth. This gentleman had stockings on of the same kind. The dog, from this information, thought it was his master, and began to demonstrate the most extravagant pleasure; but, upon further examination, finding his mistake, he retired into a corner, where, in a short time, he expired !'

Dogs have been kept by the monks of the monasteries in the Swiss Alps for the express purpose of hunting, during heavy snow storms, for travellers who may have fallen into cavities or pits, in which situations they would soon, if no timely assistance were administered, be starved, or frozen to death. These dogs were sent out in pairs, and, being perfectly conversant with their employ, traversed a great extent of country round. By marks in the snow, but principally by the scent formed from the breath of persons so situated, exhaling through the mass, they discovered the pits that contained the buried travellers; in which case, they instantly returned, and gave the alarm, and then led the benevolent monks to the relief of the distressed persons.

A gentleman having brought from Newfoundland a dog of the true breed, gave it to his brother, who resided in the neighbourhood of Thames-street, London; but who, having no other means of keeping the animal except in close confinement, sent him to a friend who was living in Scotland. The dog, who had been originally disembarked at Thames-street, was again re-embarked at the same place on board a Berwick smack; by which means, during his stay in London, he had never travelled half a mile from the spot he first landed at. During the short time he remained, he had, however, contracted a friendship for his master, and when he arrived in Scotland, his regret at the separation induced him to take the first opportunity of escaping; and, though he certainly had never before travelled one yard of the road, yet he found his way back in a very short time to his former residence on Fish-street-hill; but in so exhausted a state that he had only time to express his joy at seeing his master, and expired within an hour after his arrival.

A late tourist has recorded the following curious anecdote:—

'At a convent in France, twenty paupers were served with a dinner every day at a given hour. A dog belonging to a convent did not fail to be present at this regala, because of the odds and ends which were frequently thrown down to him. The guests, however, being poor and hungry, the dog did not get much. The portions were served one by one, at the ringing of the bell, and delivered out by means of what, in religious houses, is called a *tour*, which is a machine like the section of a cask, that, turning round on a pivot, exhibits whatever is placed on the concave side, without discovering the person who moves it. One day this dog, who had only received a few scraps, waited till the paupers were all gone, took the rope in his mouth, and rang the bell. This stratagem succeeded. He repeated it the next day with the same good fortune. At length the cook, finding that twenty-one portions were given out instead of twenty, was determined to discover the trick, in doing which he had no great difficulty; for, being hid, and noticing the paupers as they came in great regularity for their different portions, and that there was no intruder except the dog, he began to suspect the real truth, which he was confirmed in when he saw him wait with great deliberation till all the visitors were gone, and then pull the bell. He was every day afterwards rewarded with a plate of broken victuals, which he punctually rang for.'

Mr. Douce, of Hampstead, (cryer of the court of king's bench, in lord Mansfield's time,) had a favourite pointer, whose fore-leg, in jumping a gate, was broken. Unwilling to lose him, Mr. Douce took him to his friend, a surgeon at Mill-hill, who set the leg, and put on the proper bandage, and, about once a-week, Mr. Douce went with *Cato* to the surgeon's to have the leg inspected. After continuing so to do for a time, the surgeon one day informed him that he need not take the trouble of walking there with *Cato*, for that *Cato* frequently came by himself to have his leg looked to, and continued to do so till his leg was well.

Some time after the leg was cured, the surgeon one morning, while at breakfast in a room behind his shop, saw *Cato* jump the half-door, and observed to his wife, that his old friend was come to see him. The dog approached, and shewed signs to the surgeon that he wanted the door opened; on going to which the surgeon found that *Cato* had brought him a patient which he had picked up, a poor terrier, with a broken leg.

The following is another authenticated instance of this animal's sagacity. About the year 1811, a gentleman gave a greyhound bitch, named *Trenck*, to his brother, residing at Blackheath, who received her as a pensioner, by way of reward for her past services (which had been eminent,) that she might pass the remainder of her days in ease, in preference to hanging her, because she could no longer 'take the lead and keep it.' She arrived there on a Sunday, and remained apparently satisfied with her new quarters, until Tuesday afternoon, when she absconded, and, on the following Friday, made her appearance at home, so completely exhausted that she had not strength left to lap a little milk. The distance is not very great (about forty-two miles) but what rendered it very extraordinary, was her coming through such a place as London, and of course over one of the three bridges, usually so crowded, excepting for three or four hours in the middle of the night, particularly as she had never been even used to a country town, but first saw light, and passed the whole of her life, at a lone insulated house. She was a white bitch, excepting her ears, which were yellow, and remarkably fond of being noticed, so that it is wonderful she escaped being taken up in London, had she come through in the day-time; it is, therefore, probable that she passed through in the night.

In the month of December, 1800, a match was to have been run over Doncaster course for one hundred guineas, but one of the horses having been drawn, a mare started alone, that by running the ground she might insure the wager; when having run about one mile of the four, she was accompanied by a greyhound bitch, who joined her from the side of the course, and emulatively entering into the competition, continued to race with the mare the other three miles, keeping nearly head and head, affording an excellent treat to the field, by the energetic exertions of each. At passing the distance-post five to four was betted in favour of the greyhound; when parallel with the stand, it was even betting, and any person might have taken his choice for five or ten; the mare, however, had the advantage by a head at the termination.

In Italy, the charming diversion (horse racing) is not unfrequent.—The horses are not, in general, like ours, mounted and managed by a jockey, but are left at perfect liberty to exert their power in the greatest degree, to attain the goal. At the time of carnival in Rome, these races are generally run in the long-street called in Italian, *il Corso;* the length is nearly 865 toises, or rather more than one English mile. They are generally Barbary horses that are employed in this amusement. In appearance, these animals are small, and very far from handsome. They are all kept equal by a rope, against which they press with their breasts till the signal to start is given; the rope is then dropped, and the affrighted horses start away at full speed. At Florence they endeavour to increase the speed of their horses, by fixing a large piece of leather, not unlike the flaps of a saddle, on the back of each horse; the under side of this is armed with very sharp prickles, which keep perpetually goading them all the while they run. In order that the horses may not run out of the course, a strong railing runs along each side of the course, and a rope is fixed across at each end, to prevent them leaving the course at the extremities. The speed, however, of these Barbary horses, though considerable, is very inferior to that of the English racer. The course of 865 toises, at Rome, is run over in 151 seconds.—An English mile is about 826 toises; so that these horses run very little more than a mile in two minutes, which an ordinary racer is able to do in England; not to mention Childers, who is said to have run a mile in one minute; and to have run round the circular course at Newmarket, which is 400 yards short of four miles, in six minutes and forty seconds.—Starling is said also to have performed the first mile in a minute. Childers run the Beacon course in seven minutes and a half. The Round Course is asserted to have been more than once run round in six minutes and six seconds. The

Barbary horses must, according to what was said above, get over thirty-seven feet in a second; the swiftness of the English horses will be found, by this mode of estimating, far superior. Starling must have moved, in the performance mentioned before, eighty-two feet and a half in a second.

Dr. Moty, in his celebrated publication, 'Le Journal Brittanique,' considering this subject, tells us, that every bound by the fleetest Barbary horse at Rome would cover eighteen royal feet and a half, and twenty-two or twenty-three feet by the English horses; so that the swiftness of the latter would be, to that of the former, as four to three, or nearly, (We are not to forget that the English race-horse carries a jockey, and frequently weights on his back, the Barb nothing.) The horses that passed over a mile in a minute, would evidently go faster than the wind, for the greatest swiftness of a ship at sea has never been known to exceed six marine leagues in an hour; and if we suppose that the vessel thus borne partakes one third of the swiftness of the wind that drives it, the latter would still be no more than eighty feet a second, which would be two feet and a half less than the quantity of ground covered by Childers and Starling in that time. For this calculation we are indebted to M. de la Condamine's Journal of a Tour through Italy. Buffon in his Natural History, mentions an example of the extraordinary speed of the English horse. Mr. Thornhill, the post-master of Stilton, laid a wager, that he would ride in fifteen hours three times the road from Stilton to London, the distance being 215 miles. On the 29th of April, 1745, he set out from Stilton, and after mounting eight different horses, arrived in London in three hours and fifty one minutes. Instantly leaving London again, and mounting only six horses, he reached Stilton in three hours and fifty-two minutes. For the third course he used seven of the same horses, and finished it in three hours and forty-nine minutes. He thus performed his undertaking in eleven hours and thirty-two minutes.—Buffon observes, 'I suspect that no example of such fleetness was ever exhibited at the olympic games.' A horse, the property of a gentleman in Biliter-square, London, trotted, on the fourth of July, 1788, for a wager of thirty guineas, thirty miles in an hour and twenty minutes, though allowed an hour and a half. These instances of speed are astonishing, even by ordinary horses. The four miles for the Union Cup at Preston were run in very little more than seven minutes.

APPENDIX.

We will now offer the reader a few brief remarks on some of the most useful veterinary medicines; describing the qualities, effects, and the quantity usually administered; and which must in many cases be convenient in deciding the judgment of those who are doubtful in choosing the best medicines.

Soap. A substance much used in veterinary medicine. Given internally its most conspicuous effect is that of a diuretic; many other virtues have been attributed to it, probably without sufficient foundation. Good English soap is just as useful a medicine as that called Castile, Venice, or by any other foreign name. It facilitates the operation of aloes or purgative compositions, and is almost an indispensable ingredient in diuretic balls, not only on account of its efficacy as a diuretic, but from its giving a convenient and durable consistence to the mass. The usual dose of soap is about half an ounce; but it is often given in much larger doses.

Turpentine. The resinous juices of certain trees. There are four kinds, viz. Strasburgh, Chio, Venice, and common turpentine. The two last only are used in veterinary medicine. They are excellent diuretics and carminatives. Common turpentine is an ingredient in digestive and detergent ointments, and by distillation affords the essential oil, or as it is sometimes named, spirit of turpentine. Oil of turpentine is a good remedy for the flatulent colic; the dose from two to four ounces, mixed with gruel. In the human subject it has been found an effectual remedy for the tape worm, in the dose of one ounce or more. It acts as a brisk purgative in such large doses; but in small quantities it has a diuretic effect. In the horse it is the most certain diuretic we are acquainted with. Oil of turpentine, when rubbed upon the skin of animals, causes considerable irritation and pain; when used therefore as an embrocation it is generally mixed with some fixed oil, such as the oil of olives. Venice turpentine is usually made by melting and straining the common turpentine, and then adding a small proportion of the oil of turpentine.

Linseed, or *Flax-seed.* An infusion or decoction of these seeds forms a mucilaginous liquor, which is perhaps as good an emollient drink as can be employed. They afford by pressure *linseed oil*, which is sometimes used in pectoral drinks; it is given also as a laxative. After the oil has been pressed out, there remains a cake, which when powdered is called *linseed powder*, or *meal* and is commonly employed in making poultices.

Juniper Berries. These are often prescribed in carminative and diuretic balls and drenches: the dose about two or three ounces. An essential oil is obtained from them by distillation, the dose of which is three or four drams. Oil of turpentine seems to possess nearly the same medicinal qualities, and being considerably cheaper, is generally preferred.

Opodeldoc. A solution of soap and camphor in spirit of rosemary; it is more properly named in the late dispensatories soap liniment. The following formula is from the London Pharmacopœia:

Soap, - - - - -	3 ounces.
Camphor, - - - -	1 ounce.
Spirit of rosemary, - -	1 pint.

Digest the soap in the spirit of rosemary, and afterwards the camphor, till they are dissolved. By increasing the proportion of soap which the spirit will dissolve by a moderate heat; the compound, when cold, will be solid, and resemble the celebrated Steer's Opodeldoc.

Mustard. Flour of mustard made into a thin paste with water, with the addition of a little liquid ammonia, forms a stimulating embrocation, which is rubbed on the belly and chest in inflammation of the lungs and bowels with good effect; and when the kidneys are inflamed it is rubbed on the loins.

Massal, A cordial powder, so named in India, and commonly given to horses after much fatigue or exposure to rain. It is considerably stronger than the cordials usually employed in England; one dose containing

Pepper, - - - -	2 drachms.
Ginger, - - - -	2 drachms.
Saffron, - - - -	2 drachms.
Jaggery, - - - -	2 drachms.
Mustard, - - - -	2 drachms.

To this are sometimes added spices, and even capsicum, or the Chili pods.

Glauber's Salt, Sulphat of Soda. This is an inconvenient purgative for horses, on account of the large quantity that is required to produce any considerable effect. The best mode of giving it, is to dissolve about a pound and a half in a pail of water, and allow the horse no other liquid until he has drunk it; which he will generally do in the course of a day. Cattle are purged by a smaller quantity than horses; the dose for a cow is from twelve to sixteen ounces dissolved in gruel.

Paregoric Elixir, or *Camphorated Tincture of Opium.* A preparation composed of

Hard purified opium, -	1 drachm.
Flowers of benjamin, -	1 drachm.
Camphor, - - -	2 scruples.
Oil of aniseed, - - -	1 drachm.
Proof spirit, - - -	2 pints.

To be digested for three days, frequently shaking the mixture, and then strained off for use.

Paregoric elixir has been much used in human medicine for troublesome coughs; but it is by no means an eligible preparation for horses, on account of the large proportion of spirit it contains.

Balsam of Sulphur is prepared by boiling sulphur and olive oil together until united in the form of a dark-coloured tenacious mass. This has been much esteemed by old farriers in obstinate coughs, but is now seldom employed. When mixed with a small proportion of oil of aniseed, it has been thought more efficacious, and is then named anisated balsam of sulphur.

Shoeing. In the plate on shoeing, Fig. 4 represents a front shoe. Fig. 6 represents the female screw in the heel; and *a* the sharp wedge which is screwed into the heel. The advantage and convenience of this shoe is striking, and can scarcely require any explanation. The wedge can be screwed on or taken off at pleasure. This improvement must soon be generally adopted in this country.

Warrantry. When a horse is purchased with a warrantry of soundness, the purchaser should have the conditions of the bargain fully expressed on a stamped receipt, in the following form:

> Received of ——— the sum of —— for a black gelding, warranted perfectly sound, free from every kind of vice, and between —— and —— years old.

If the horse is purchased for harness, it should be added, 'steady in harness, not giving to kicking, rearing, or jibbing.'

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Explanation of the Plate describing the diseased and healthy State of the Horse's Eye.

Fig. 1. The healthy state of the pupil in a moderate light. It should be observed, that, as the pupil enlarges, it approaches to the circular form, as in Figs. 4. and 5; and, by contracting, the horizontal diameter is lengthened, as in Figs. 2. and 3.

Fig. 2. The state of the pupil when the horse is brought out of the stable and placed in the shade.

Fig. 3. The form of the pupil when the eye is exposed to the direct rays of the sun.

Fig. 4. A morbid dilatation of the pupil of the eye. The black, or dark brown substance represented at the superior margin of the pupil is a natural appearance, though sometimes mistaken for a disease.

Fig. 5. The pupil dilated in a less degree, with an incipient and general opacity of the part.

Fig. 6. Appearance of the pupil when the eye is affected with cataract.

Fig. 7 represents a partial cataract; that is, the appearance of white or opaque spots in the pupil. In this case, a considerable portion of the pupil is free from those spots, particularly the centre; so that vision would not be materially impeded.

Fig. 8 represents a similar disease, with some slight variation as to the situation of the spots.

Fig. 9. A more circular pupil, with opacity in the centre and on one side.

Fig. 10. A contracted pupil with considerable opacity, causing almost total blindness.

Fig. 11. A pupil of the natural size, with opacity in the centre, materially obstructing vision.

Fig 11 [illegible] of the

FINIS.

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Printed by Mackenzie and Dent,
Newcastle.

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THE HORSE'S EYE BOTH DISEASED AND HEALTHY.

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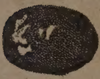

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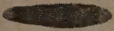

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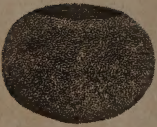

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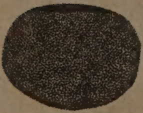

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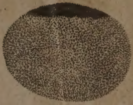

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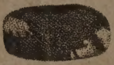

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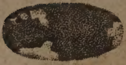

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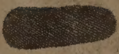

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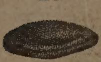

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